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# **South Sudan Corridor Diagnostic Study and Action Plan**

## **Final Report**

September 2012

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# South Sudan Corridor Diagnostic Study and Action Plan

## Final Report

### **SUBMITTED UNDER**

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# Acronyms

CDS	Corridor Diagnostic Study
CES	Central Equatoria State
CESRA	Central Equatoria State Revenue Authority
CFS	Container Freight Station
COMESA	Common Market for Eastern and Southern Africa
CPA	Comprehensive Peace Agreement
DRC	Democratic Republic of Congo
EAC	East African Community
EACDS	East Africa Corridor Diagnostic Study
EES	Eastern Equatoria State
EIRR	Economic Internal Rate of Return
GOSS	Government of South Sudan
GDP	Gross Domestic Product
GVM	Gross Vehicle Mass
ICAO	International Civil Aviation Organization
ICD	Inland Container Depot
IMF	International Monetary Fund
IMT	Intermediate means of transport
IPA	Investment Promotion Act
JICA	Japan International Cooperation Agency
MoRB	Ministry of Roads and Bridges
MoT	Ministry of Transport
NGO	Non-Governmental Organization
NTB	Non Tariff Barrier
NMT	Non-motorized means of transport
OSBP	One stop border post
PIDA	Program for Infrastructure Development in Africa
PPP	Public-Private Partnership
RECs	Regional economic communities
RMG	Rail Mounted Gantry
RTG	Rubber-Tired Gantry
RVR	Rift Valley Railways

SADC	Southern Africa Development Community
SSCDS	South Sudan Corridor Diagnostic Study
SISP	Sudan Infrastructure Services Project
SPLA	Sudan People's Liberation Army
SSP	South Sudan Police
SSRA	South Sudan Roads Authority
STS	Ship-to-Shore
TA	Technical Assistance
TEU	Twenty-foot equivalent unit
TSP	Transport Sector Policy
UNWFP	World Food Program
USAID	U.S. Agency for International Development
WTO	World Trade Organization

# Executive Summary

Anchored by the Port of Mombasa in Kenya, the Northern Corridor is the principal transport route for regional and international trade of South Sudan. Because of inadequate physical infrastructure and inefficiency, transit times are long and costs prohibitively high in the corridor. Freight costs per km for South Sudan cargo is more than 50 percent higher than costs in the East African Community and transport costs can exceed 100 percent of the value of imports. Reducing those costs and achieving transport logistics efficiency—and ultimately a sound regional transport system—will facilitate trade and investment, the cornerstones of economic growth and prosperity.

Following on the successful study for East Africa in 2011, this South Sudan Corridor Diagnostic Study (SSCDS) examines the performance of South Sudan's main transport corridor and subcorridors and presents an Action Plan for removing impediments to efficient transport logistics. To make the most of existing and ongoing work, the Nathan Associates team first gathered and reviewed relevant studies, reports, and other documents as we became aware of them. These covered road plans and projects, regulatory and legal frameworks, and documentation of customs procedures. Gathering such information was complicated by the lack of a repository for reports and other documents.

The team conducted a FastPath® assessment of the performance of South Sudan's trade corridors that link to the Northern Corridor. We gathered data on transport cost, time, and reliability through extensive interviews with stakeholders, including shippers (traders, manufacturers, and retailers), transport service providers (ports, shipping lines, inland container depots, truckers, and railways), freight forwarders (clearing agents, insurance companies) and government ministries and agencies (transport ministries, customs, and regulators). The assessment highlighted the physical bottlenecks and other problems that impede the transport of imports and exports from South Sudan (see Exhibit ES-1).

## Exhibit ES-1

*Corridor Performance Assessment*

<p>When compared to other international corridors, South Sudan's corridors are performing at a level that corresponds to "fair" in the Juba-Nimule section and "poor" in the other corridors within South Sudan. Specific observations are as follows:</p> <ul style="list-style-type: none"> <li>• Road transport represents the bulk of transport cost (87 percent to 94 percent) while the port represents the bulk of transport time (60 percent to 64 percent). The dependence on road transport along with inefficient road operations and regulation drive up costs and prices.</li> <li>• Road transport costs are high due to lack of backhauls, poor road conditions, and security concerns. On the Northern Corridor, high informal payments are a significant component of total costs.</li> <li>• Road-damaging overloading is common because road controls in South Sudan are minimal.</li> <li>• Poor security and poor road conditions make it 60 percent more expensive to transport of goods from Mombasa on the Juba via Nadapal route than the Juba Direct route (Juba-Nimule-Tororo).</li> <li>• The price for transporting bulk cargo via Kaya is 35 percent lower than on the other routes because the route lacks axle load controls. Truck owners overload trucks, increase their productivity, and charge lower prices. Prices are also lower because of significant competition for this type of cargo from informal operators.</li> </ul>	<ul style="list-style-type: none"> <li>• The interruption of service in the Tororo-Pakwach railway has halted multimodal service. Multimodal shipments can greatly reduce transport costs for large volumes of heavy goods, increase transport competition, and curb road deterioration by reducing the number of trucks hauling heavy loads by road.</li> <li>• Lack of clear customs procedures creates opportunity for corruption and long delays at the border crossings into South Sudan.</li> <li>• Berth and yard congestion and the lack of customs clearance coordination contribute to excessive dwell time in Mombasa (up to 9 days).</li> <li>• Extra inventory costs due to delays and inefficiencies in the corridors have a significant impact on the total costs of the goods, accounting for 10 percent to 25 percent of logistics costs.</li> <li>• In Kenya, vehicles licensed for transit cannot carry domestic cargo and must use prescribed transit routes. This results in many empty return trips.</li> <li>• Overload control strategy is to inspect all commercial vehicles. Targeted risk management and incentives that encourage truckers to self-regulate are needed.</li> </ul>
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A 20-year traffic forecast was prepared for South Sudan, highlighting potential traffic flows along the corridors. As with the East Africa CDS, the forecast shows that congestion at ports and on rail and roads will reach epic levels and constrain economic growth if capacity is not increased. We conclude that substantial investment in regional transport infrastructure is urgently needed now and will be needed for the next several decades to make South Sudan's corridors efficient and reliable. Below we recommend strategies to address the constraints and inefficiencies identified in the performance assessment.

- ***Expand Capacity and Increase Productivity at the Port of Mombasa.*** As the gateway for the Northern Corridor, the port must have adequate capacity and be able to perform efficiently if corridor performance overall is to improve. To expand capacity in the short term, an optimized port/ICD integration program that transfers cargo handling at marine terminal container yards to

near-port ICDs is proposed. Long-term development projects, including new container terminals that will expand capacity and increase berth productivity are defined in the port master plan. These projects should be expedited. Projects to increase capacity for liquid and dry bulk products at the port should be implemented as planned. (Recommendations for Mombasa Port are the same as those in the East Africa CDS.)

- **Revive Rail.** Rift Valley Railways' ambitious turnaround program entails infrastructure and equipment rehabilitation as well as commercial and operational improvements. To become viable, RVR is aiming to increase its freight volumes substantially and is targeting the container sector to achieve threshold volumes, as well as multimodal flows through ICDs in its hinterland. This will provide much needed competition with road transport. To support these improvements, RVR has raised capital from donors and the private sector. It needs continued funding support as it expands service to the Tororo-Pakwach railway.
- **Upgrade and Rehabilitate Roads.** Road improvements projects are central to the improvement strategy and fall into one of three categories: (1) upgrade road capacity by adding lanes to roads with heavily traffic; (2) rehabilitate paved roads whose poor condition affects corridor performance; and (3) upgrade key feeder roads from gravel to paved standards.
- **Develop Multimodal Capacity.** ICDs will make multimodal transfers efficient and provide a venue for cargo consolidation and similar services that can increase backhaul traffic leading and lower transport costs.
- **Develop Water Transport Options.** Transport along the Nile River offers a good opportunity for low-cost transport in the hinterland, including between Juba and other South Sudan locations. This can be especially important during the rainy season, when river capacity is greater and the roads are impassable.

Moving from strategy to implementation requires an integrated action plan that covers infrastructure constraints and bottlenecks, operational inefficiencies, policies, and procedures. Overall, we recommend that USAID pursue technical assistance interventions that improve transport operations and policies and that help realize the benefits of proposed infrastructure investments.

Consistent with the goals and objectives of the SSCDS and its technical analysis, we selected projects for the Action Plan on the basis of three criteria:

1. Estimated impact on corridor performance as measured by the factors of price, time, and reliability;
2. Estimated economic impact as measured by the economic internal rate of return; and
3. Readiness for near-term implementation.

We used our traffic forecasts to determine the optimal capacity of the projects and estimate their potential benefit. The plan presents 19 projects—14 road projects, three rail projects, one river transport project, and one oil pipeline transport project. Of these, 14 are related specifically to infrastructure improvement and five to operations/regulations. They have a total cost of US\$2.58 billion. It is anticipated that eight projects could be implemented under a PPP arrangement with varying degrees of private sector participation.

Other projects beyond the short to medium actions recommended here are necessary to expand transport capacity in preparation for the expected huge volumes of traffic. And there are in fact plans and ongoing efforts to develop new port capacities, modernize and expand rail transport, and upgrade and expand roads. We have reflected on these plans and expect that clear development options and strategies will have emerged by the time the Action Plan is implemented. Still, we consider the plan a good foundation for future developments. If followed, it will create corridor infrastructure that gives potential investors in economic or traffic-generating activities the confidence to invest. Such investment, in turn, will spur demand for implementation of long-term projects being proposed.

# 1. Introduction

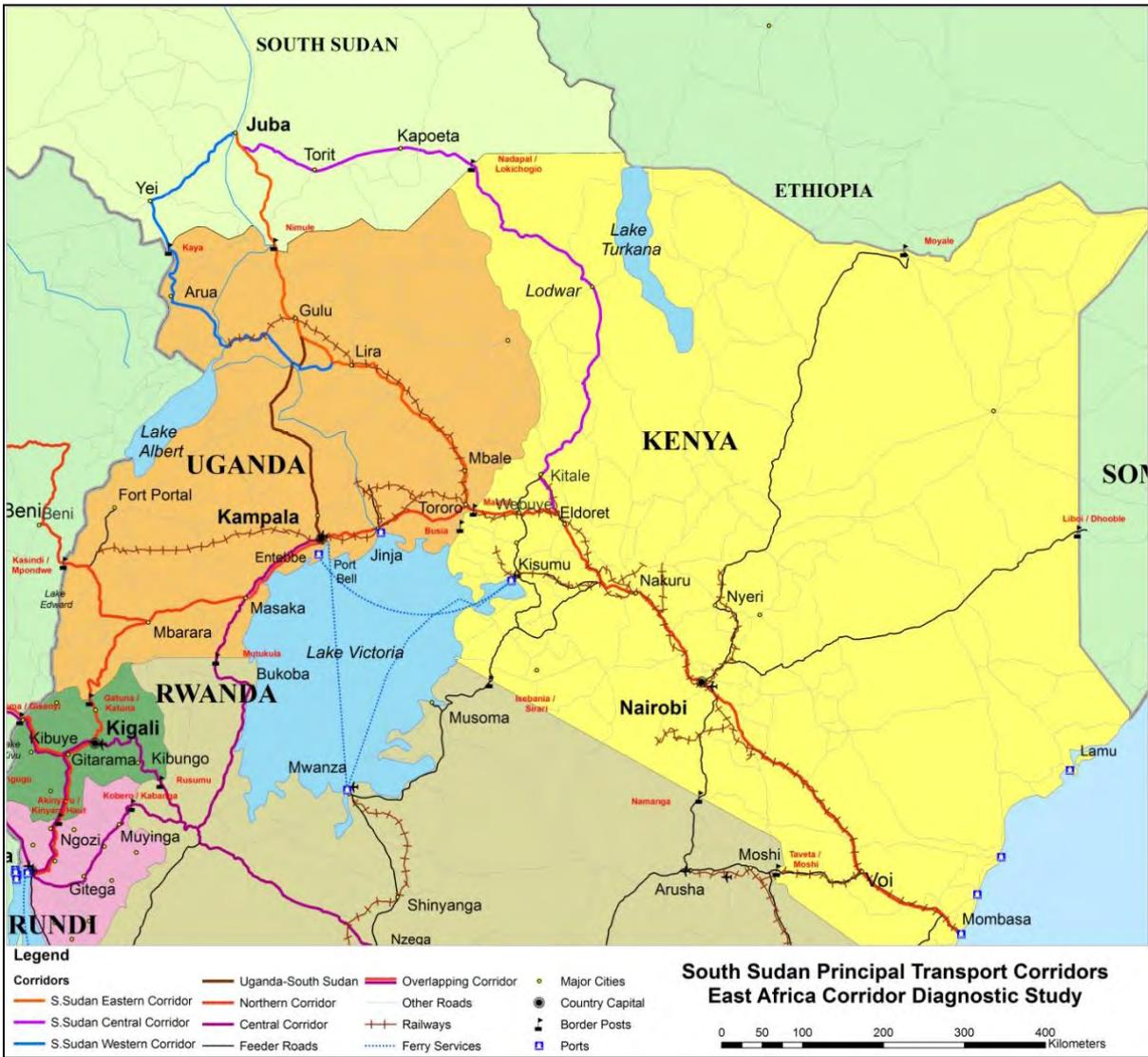
Anchored by the Port of Mombasa in Kenya, the Northern Corridor is the principal transport route for regional and international trade of South Sudan. Because of inadequate physical infrastructure and inefficiency, transit times are long and costs prohibitively high in the corridor. Freight costs per km for South Sudan cargo is more than 50 percent higher than costs in the East African Community and transport costs can exceed 100 percent of the value of imports. Reducing those costs and achieving transport logistics efficiency – and ultimately a sound regional transport system – will facilitate trade and investment, the cornerstones of economic growth and prosperity.

After Nathan Associates successfully completed the Corridor Diagnostic Study (CDS) for EAC's five member countries, the South Sudan Mission of the U.S. Agency for International Development (USAID) asked Nathan Associates to conduct a similar study for South Sudan.

## Study Scope

This South Sudan CDS reviews all aspects of the Northern Corridor and its subcorridors from Juba, the capital of South Sudan, to the Port of Mombasa: infrastructure, nontariff barriers, policies, regulations, and institutional organization (see Figure 1-1). Economic and traffic forecasts also consider the potential impact of the proposed development of a pipeline connecting South Sudan to the proposed port of Lamu in the Indian Ocean. The governments of South Sudan and Kenya have signed letters of commitment in this regard and we believe that the likelihood of this project has increased significantly given the high transport charges Sudan imposes on oil transported to Port Sudan and the political differences between the governments of South Sudan and Sudan. The South Sudan CDS does not analyze the potential impact of the construction of a road connection to Ethiopia, for which there is no proposed project at this time.

Figure 1-1  
CDS Geographic Scope



In developing the South Sudan CDS, the study team synthesized current information on the time and cost of transporting goods, assessed national and regional policies, analyzed the costs and benefits of various interventions, established a baseline for measuring corridor improvement, examined possible approaches such as public-private partnerships, and created an Action Plan for the development of an efficient transport system connecting South Sudan to East Africa and the world through the Port of Mombasa. The immediate goal for the plan is to spark implementation in EAC member countries and support among international partners and the private sector. Rather than presenting a long-term development strategy, the plan identifies and prioritizes infrastructure and operational interventions that can have an immediate impact on corridors performance and that can be implemented within five years.

Between August 20 and August 24, 2012 a Nathan Associates team composed by Ms. Lisa Yarmoshuk (Project Director), Rean Botha (Legal and Institutional Expert), Carlos Espindola (Team

Leader/Transport Engineer), Severin Kaombwe (Transport Institutional Expert), Anthony Murithi (Transport Expert) and Daniel Perea (Logistics Expert) travelled to Juba. The purpose of the visit was to conduct meetings with the Ministry of Transport staff, the USAID South Sudan Mission and to conduct the final workshop for the project.

The South Sudan Corridor Diagnostic Study Stakeholders' Workshop was held on August 23, 2012 in Juba, Republic of South Sudan. The purpose of the workshop was to have stakeholders review the Draft Action Plan and to provide comments for incorporation in the final Action Plan, and to promote broad ownership of the proposed Action Plan among stakeholders. The workshop was hosted by the Ministry of Transport and the Ministry of Roads and Bridges, and supported by South Sudan's United States Agency for International Development (USAID) mission. There were 39 stakeholders representing different organizations, including government entities and development partners. The workshop resulted in lively discussions of various topics presented in the report.

Revisions to the Draft Action Plan included an update to the current institutional setup, the *Road Safety and Traffic Bill*, a new forecast scenario considering the opening of the oil pipeline to Port Sudan and an update of unitary costs considered for the Action Plan projects (considering current development costs provided by the World Bank). At its conclusion, the Action Plan was adopted.

## **Report Organization**

Prepared in accordance with the reporting requirements of the terms of reference, the CDS is organized to reflect the order in which the analysis was conducted. In Chapter 2, we describe the corridor and the transport network connecting South Sudan to its neighbors and the world, along with historic traffic flows. In Chapter 3, we discuss transport performance and constraints in the corridor. Chapter 4 describes the legal and regulatory framework for the corridor, including national transport policy.

In Chapter 5, we present our forecasts for South Sudan trade and traffic, summarizing South Sudan's economic drivers and our forecasting methodology. Chapter 6 outlines projects proposed to address the logistics, legal, and regulatory deficiencies identified in Chapter 3 and during interviews with sector actors. Chapter 7 prioritizes projects in an Action Plan, with details on each project presented in the appendix A.



## **2. Corridor Infrastructure**

This chapter presents the results of the existing conditions assessment of the main corridors connecting Juba in South Sudan with the Port of Mombasa in Kenya and transit through Uganda and Kenya. The field work was conducted from September 2011 through November 2011.

### **South Sudan Corridor Existing Infrastructure and Condition**

The transport network between South Sudan and the Port of Mombasa is an extension of the Northern Corridor that connects the country to markets in Kenya and Uganda (see Figure 1-1). As such, it is South Sudan's lifeline for access to a major regional port and for intraregional trade and personal mobility. Before independence, South Sudan relied on road, rail, pipeline and river transport, connections with the north. Since independence and the closing of the border with Sudan, the four road connections between Juba, South Sudan's capital, and the Northern Corridor have assumed strategic importance.

Traffic to and from Juba falls into two categories: (1) interregional trade between South Sudan and Uganda, Kenya, DR Congo, Rwanda, Burundi, and Tanzania; and (b) transit imports and exports with the rest of the world handled through the ports of Mombasa and Dar es Salaam. Currently, South Sudan's transit trade for non-oil exports is handled through the Port of Mombasa while oil exports have all but stopped as a result of disputes with Sudan over royalties and transport fees for the use of the pipeline to Port Sudan. Central to the country's development, these corridors also face many transportation and trade facilitation challenges.

#### **MOMBASA PORT**

A multipurpose port, Mombasa handles containerized cargo, general cargo, dry bulk, and liquid bulk. In 2010, the total throughput of the port was 18.9 million tons; throughput has been growing at an average annual rate of 6.1 percent from 2005-2010. The predominant traffic of the port is imports, which represent 85 percent of the total traffic. For imports, 39.4 percent is liquid bulk, 28.3 percent is containerized cargo and only 23.6 percent is dry bulk and 8.6 percent is general cargo.

Table 2-1  
*Mombasa Port Traffic, 2005-2010 (000s tons)*

Type of Cargo	2005	2006	2007	2008	2009	2010	AAGR 2005-2010
<b>Imports</b>							
Containerized Cargo	2,645	2,970	3,761	3,959	4,086	4,591	9.6%
General Cargo	1,009	1,129	1,105	1,020	1,349	1,397	5.6%
Dry Bulk	2,128	2,344	2,722	2,891	4,641	3,827	10.3%
Liquid Bulk	4,918	5,403	5,474	5,441	6,431	6,386	4.4%
Total	10,700	11,846	13,062	13,311	16,507	16,201	7.2%
Transit Cargo <sup>1</sup>	3,202	3,473	4,042	4,471	4,612	5,004	7.7%
<b>Exports</b>							
Containerized Cargo	1,680	1,625	1,934	1,996	1,952	2,218	4.7%
General Cargo	139	185	168	299	269	192	5.5%
Dry Bulk	286	313	205	200	62	70	-20.9%
Liquid Bulk	173	132	167	190	167	95	-9.5%
Total	2,278	2,255	2,474	2,685	2,450	2,575	2.1%
Transit Cargo	334	335	381	404	368	377	2.0%
<b>Total Imports and Exports</b>	<b>12,978</b>	<b>14,101</b>	<b>15,536</b>	<b>15,996</b>	<b>18,957</b>	<b>18,776</b>	<b>7.9%</b>
Transshipment	303	318	426	419	105	158	-10.3%
<b>Total Traffic</b>	<b>13,281</b>	<b>14,419</b>	<b>15,962</b>	<b>16,415</b>	<b>19,062</b>	<b>18,934</b>	<b>6.1%</b>
Container Traffic (TEU's)	436,671	479,355	585,367	615,733	618,816	695,600	8.1%
Vessel Calls (No.)	1,731	1,857	1,811	1,686	1,748	1,579	-1.5%

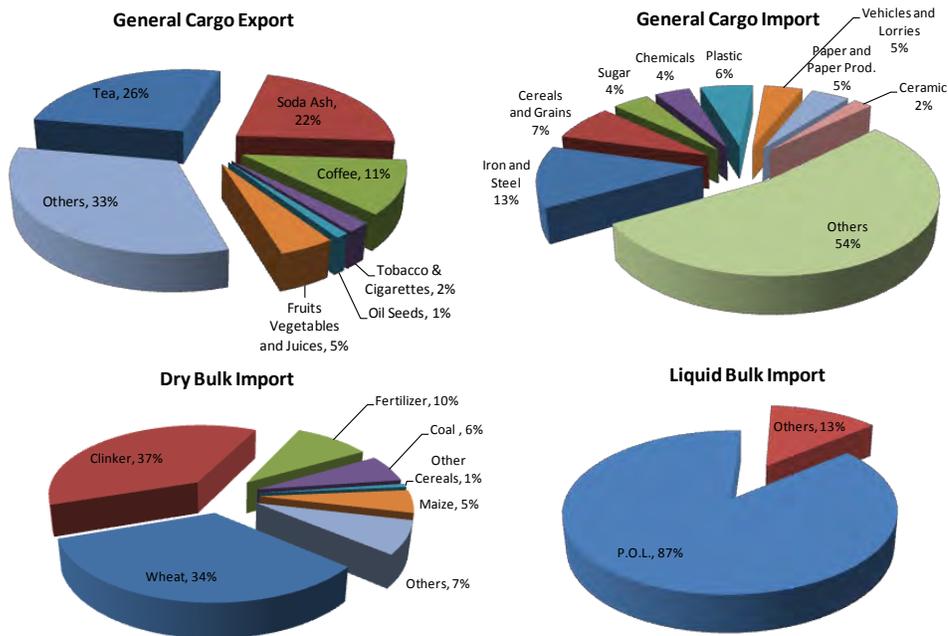
Note 1: Included as part of total cargo

Exports through the Port of Mombasa grew modestly during the 2005-2010 period, with an average annual increase of two percent. Transshipment makes up a minimal portion of the port traffic, only one percent in 2010 (transshipment volumes shrank markedly in 2009 and recovered somewhat in 2010).

### *Dry and Liquid Bulk and General Cargo*

The main export commodities handled at the port are coffee, tea and soda ash accounting for almost 60 percent of the total general cargo exports. In terms of general cargo imports, the most important commodities are iron and steel followed by cereals and grains, plastic, vehicles, sugar, paper and chemicals with similar participations between seven and four percent. Dry bulk imports are clearly dominated by clinker, wheat and fertilizers, which account for 61 percent of the dry bulk imports total. Finally, petroleum, oil and lubricants represent 87 percent of liquid bulk imports.

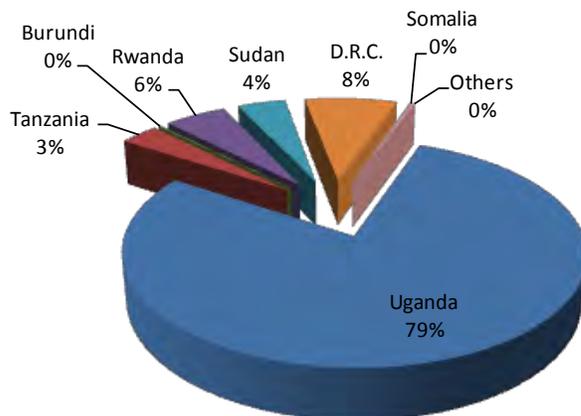
Figure 2-1  
Mombasa Port Traffic Composition by Commodity, 2010



SOURCE: Kenya Port Authority.

More than 5.3 million tons of transit cargo was moved through the port in 2010. By far, the most important origin / destination of transit cargo moved through Mombasa is Uganda, followed by D.R.C., Rwanda and Sudan. It is reasonable to assume that a large portion of Sudanese cargo flowing through Mombasa -prior to the independence- had as final destination what now constitutes South Sudan; cargo going to the rest of Sudan would most likely use Port Sudan. Inbound and outbound transit flows with Tanzania have reduced substantially; imports towards Burundi and Somalia have also decreased.

Figure 2-2  
Mombasa Port Transit Traffic, 2010 (percent)



SOURCE: Kenya Port Authority.

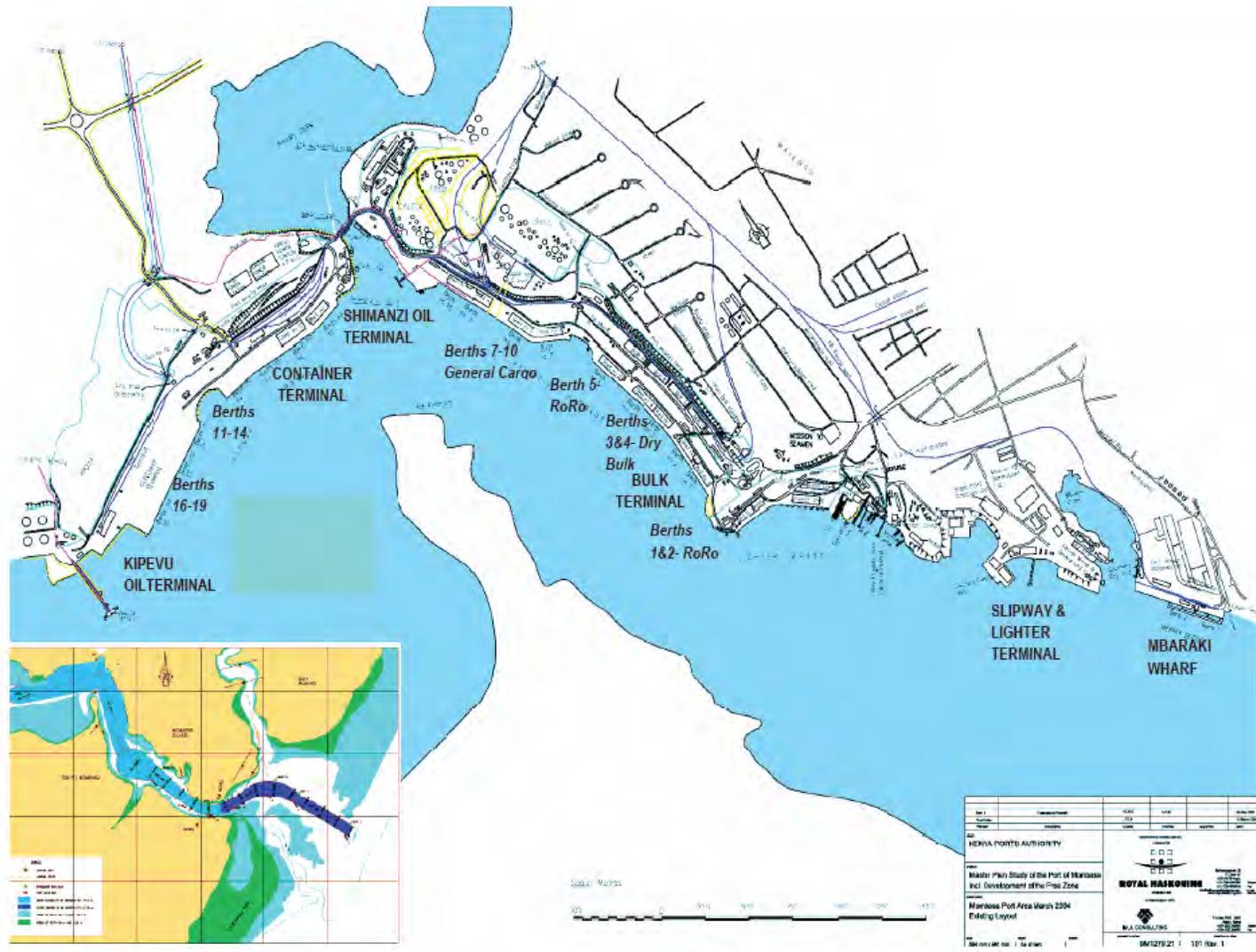
The current layout of Mombasa Port is presented in Figure 2-3, and the characteristics of the port are presented in Table 2-2. The main physical constraint at the port is the access channel, which is narrow (200 m) and shallow (approximately 13.7 m). Nevertheless, there are plans to widen and deepen the channel, to construct an additional new container terminal at Kipevu West and to establish a petroleum terminal just down the coast where the water is deeper and to relocate the tank farm further from the city with safety and environmental benefits. Funds have already been secured for the new container terminal which will have three berths of 900 meters and 100 hectares of yard space.

Table 2-2  
*Characteristics of Mombasa Port*

<b>Port of Mombasa, Kenya</b>	
Natural Catchment Area	Kenya, Uganda, Sudan, Great Lakes region and Southern Ethiopia
Vol of freight - total, import, export mtpa	19 mtpa
No of berths, depths	16, 10.0m
Container Berths	5, total length 964m
Container Equipment , Capacity	4 x 40t gantry cranes, full capacity
Container Vols - total, Imp, Exp - TEUs	695,600
Bulk berths & equipment	17 cranes, 5t to 20t
Marine Access	Channel 15km long, 13.7m deep, tide 2.5 to 4m
Road Access	Poor, congested
Rail Access	Via RVR
Current Operational Status	Fully operational, congested, only port serving Kenya
Specific Problems / Issues	Container dwell time, port congestion, recently improved.
Planned Developments	37% of all cargo containerized - planned expansion of container terminal, improved road and rail access. Possible additional port at Lamu
Intervention / Assistance Required	No plans yet for container terminal privatization

Source: Nathan Associates Inc.

Figure 2-3  
 Current Layout of Mombasa Port



### *Container Facilities*

Containers are handled in Mombasa in two types of facilities: (1) specialized container terminals and (2) conventional terminals. The conventional terminals also handle other, non-container cargoes. The specialized terminals handle about 70–80 percent of the total container throughput. Containers are not handled by direct delivery. The containers are first stored in container yards, stay several days inside the terminals and only then, are usually released.

Mombasa's specialized container terminal (Kipevu West), Berths 16–18, consists of:

- 650 m of marginal berthage with –10.2 m depth CD alongside and about 15 ha of backup area
- Four gantry, STS cranes
- RTG based container yard
- Back of terminal intermodal yard with two RMGs

The conventional terminal in Mombasa includes Berths 11–14 with a total of about 800 m of berthing length and a depth alongside of about –10 meters. This terminal also handles general cargoes. Berths 13–14 are used exclusively for containers, mostly those of one shipping line (Maersk). All container handling in Mombasa's conventional terminal is by ship's gear. Mombasa has only one mobile harbor crane, but it is not presently used for ship handling.

Traffic of containerized cargo reached 695 thousand TEU in 2010 (Table 2-3). Port statistics indicate that container traffic increased on average by 8.1 percent yearly in the 2005-2010 period. The handling of empty containers is significant; it represents 33.8 of the total TEU handled at the port. This is a reflection of the imbalance between imports and exports flowing through the port.

Table 2-3  
*Mombasa Port Container Traffic, 2005-2010 (TEU)*

Type	2005	2006	2007	2008	2009	AAGR	
						2010	2005-2010
<b>Imports</b>							
Full	193,223	217,869	277,792	292,308	301,460	338,842	9.8%
Empty	14,573	11,596	4,244	5,080	6,387	6,472	-12.7%
<b>Exports</b>							
Full	94,120	86,317	101,314	102,914	95,842	110,314	2.7%
Empty	107,467	132,237	165,546	180,976	205,611	225,380	13.1%
<b>Transshipment</b>							
Full	22,318	21,825	30,478	30,262	7,407	11,072	-11.0%
Empty	4,970	9,511	5,993	4,193	2,109	3,520	-5.6%
<b>Total</b>							
Full	309,661	326,011	409,584	425,484	404,709	460,228	6.8%
Empty	127,010	153,344	175,783	190,249	214,107	235,372	10.8%
<b>Grand Total</b>	<b>436,671</b>	<b>479,355</b>	<b>585,367</b>	<b>615,733</b>	<b>618,816</b>	<b>695,600</b>	<b>8.1%</b>

Source: Kenya Port Authority

Mombasa container terminal is not designed according to the specifications of modern container terminals. The width is about 250 m, while modern terminals' width is usually 400–500 m. As a result, the backup area is limited. Moreover, there is no practical way of expanding the terminal areas since the marine port facilities are cordoned by the city or other private facilities. The small backup area provides for relatively small container yard. The resulting shortage in container yard currently is the main source of terminal congestion in the port.

A related and even more severe problem is traffic congestion inside and outside the terminal. The container yard seems to have difficulties in serving ship and gate traffic at the same time. During our visits at the terminal we observed long waiting lines of trucks inside the terminal and at both out and in gate. The result is that the STS cranes often wait for yard tractors, a major factor for the low crane productivity and subsequently low berth productivity.

CFS (or ICDs) were first permitted in Mombasa in 2007. At present, Mombasa has 17 CFS, about half of them handle containers. However, it is understood that only seven are presently handling import boxes.

## **SOUTH SUDAN ROAD SYSTEM**

### *Roads*

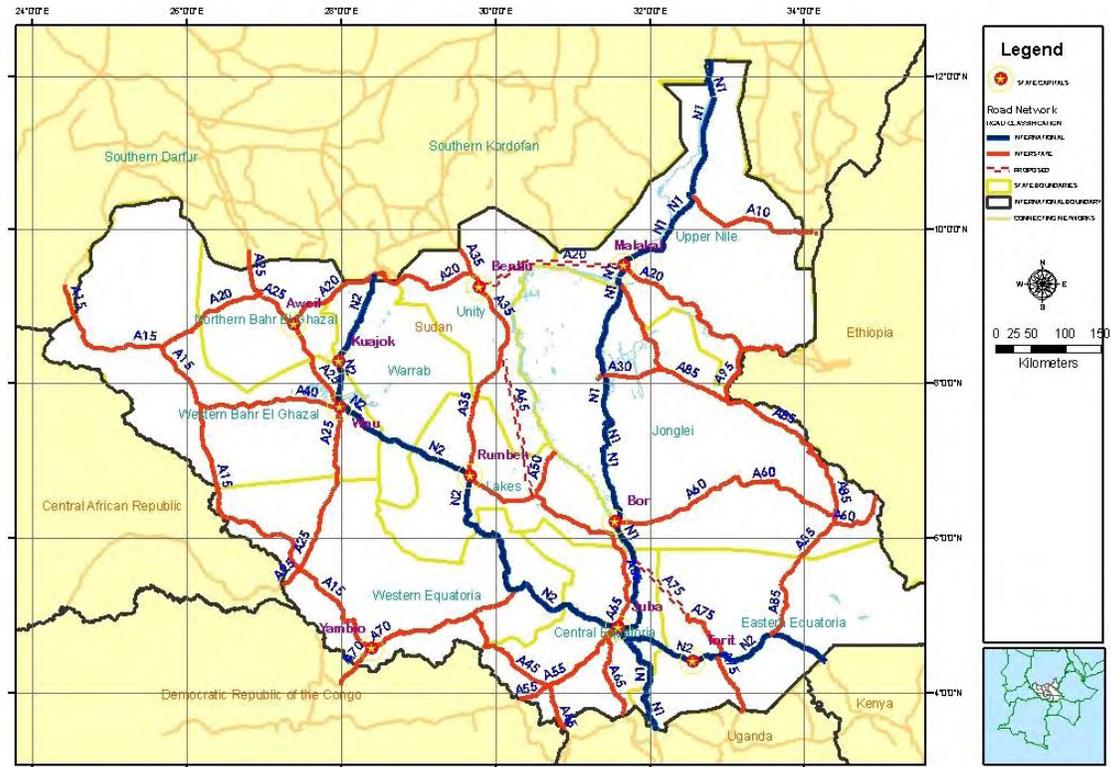
The current condition of the South Sudan road network is poor. However most of the main arteries of the system are under rehabilitation plans. Through USAID's Sudan Infrastructure Services Project the Government of South Sudan is developing policies on road classification, numbering and naming system for the rural and urban roads of its' national road network. The preliminary classification of national road network for South Sudan is shown in Figure 2-4.

In the short term, road development and maintenance plan includes development of the trunk and primary roads, secondary and tertiary roads (including feeder roads), urban roads, institutional support, and road safety enhancement. Prioritization criteria for the trunk and primary roads includes the strategic regional links to seaports, interconnection of state capitals, connectivity of densely populated areas, and connectivity to services and economic activities. Prioritization criteria for the secondary and tertiary roads development includes providing access to social services, identified priority for rural development (including impact on food security), and link to trunk road and markets.

Road transport comprises both road freight and road passenger transport. The local trucking capacity is weak and small, and dominated by large number of foreign owned transporters and carriers. High vehicle operating costs because of poor road conditions coupled with cost of fuels and uncertain security situations result in high transport costs. There is an added problem of poor road safety and a high accident rate resulting in injury, loss of life and economic loss associated with damaged vehicles and cargoes. Moreover, accidents involving heavy goods vehicles sometimes result in road damage, damage to road furniture and spillages reversing gains achieved with recent infrastructure upgrading. As discussed more fully in Chapter 4, there are, as yet, limited options available to the authorities to recover damages to infrastructure from trucking operators or firms resulting from these incidents.

Upsurge in commercial freight traffic are observed on major corridors from Uganda, Kenya and DR Congo due to gradual road improvements and assurance of security.

Figure 2-4  
National Road Network Classification for South Sudan



Source :South Sudan Ministry of Transportation

Road passenger transport, though expanding, is far from providing adequate service. Formal transport is characterized by a very old fleet, overcrowded vehicles, lack of schedules, no safety equipment (fire extinguishers, emergency exits) and untrained drivers. Informal transport is common, mainly provided by overcrowded minivans. Challenges include high operation costs due to poor quality roads and lack of security. Other challenges the government will have to address include establishing a legal and institutional framework for regulation and coordination.

## SOUTH SUDAN ROAD SELECTED CORRIDORS

There are four major corridors to access Juba for cargo coming from Mombasa or from Kampala. The trunk road network that stretches from Mombasa to 1) Juba Direct (via Nimule) is 1, 713 km, 2) via Kampala is 1,835 km, 3) via Kaya is 1,854 km and 4) via Nadapal 1,798 km (see Figure 2-5). Previous road capacity and road condition assessments for the Northern Corridor addressed some of the segments that are relevant to South Sudanese connectivity and regional integration, particularly those routes via Nimule. However, multiple relevant segments in Uganda and Kenya were not part of these studies.

The four corridors examined in this study were selected on the basis of our understanding of the criteria applied by shippers and transporters in choosing a supply route, and corresponding border crossing, for cargo going to and from South Sudan. These criteria are as follows:

- **Final destination.** Goods destined for Juba, the north (Malakal, Bor), or Torit are most likely to be cleared through the Nimule border crossing. Goods destined for Yei, Rumbek, Wau are more likely to be cleared through the Kaya border post.
- **Distance and road conditions between origin and destination.** While distance is a very important determinant of cost, differences in road conditions can be the determining factor for selecting a route.
- **Whether cargo is duty paid or is duty exempted.** The preferred choice for duty exempted cargo (and not destined or going through Yei) is via Nimule border. Goods that pay duty and are going to Juba can use either route, via Nimule or Kaya.
- **State levies.** The Kaya route only requires one official state levy tax, while the route through Nimule requires paying taxes to two states, Central and Eastern Equatoria. The final decision on route choice rests with the client who is liable for the tax.

Figure 2-5

South Sudan Corridors



Currently, more than 95 percent of transit cargo is cleared through Nimule, while only 4.5 percent and 0.5 percent go through Kaya and Nadapal border posts respectively.

Other alternative supply routes to Juba, which also involve other modes of transport include:

1. Kosti –Malakal –Bor –Juba by river
2. Combined air and road: Nairobi –Lokichokio/Nadapal by air, and Napadal – Torit –Juba by road
3. Nairobi –Juba, direct by air
4. Kampala –Juba direct by air

Before independence, river transport was very active; goods coming from Khartoum reached Juba by road, air, and river. Goods were loaded on river barges at Kosti and came by the Nile to Juba. Goods were also loaded at Juba and shipped downstream by barge to Bor, Malakal, and other trading center on the Nile. Goods by air mode from Kampala and Nairobi were mainly for high value goods, such as spare parts, and account for less than 1 percent of total traffic going to Juba.

This study focuses on the traffic of goods coming to Juba via the primary routing through Nimule. The road capacity and road condition of the road network within South Sudan has been recently addressed as part of initiatives to upgrade and enhance road conditions. However, to complement the information of the feasibility studies, our team conducted a physical evaluation of significant segments of the South Sudanese roads that are part of the four corridors identified above.

### *Juba – Torit – Nadapal Road*

The Government of South Sudan (GOSS) considers the Juba–Nadapal road a key route. It crosses the southeast region of Southern Sudan, linking the Central and Eastern Equatoria states including the cities of Juba, Torit, and Kapoeta. Eventually the road could be extended to Ethiopia, however this possibility doesn't seem likely in the short and midterm.

The road is 364 km long, with a mostly flat to hilly topography. It starts from the banks of the White Nile in the outskirts of Juba, crosses the Boaya Hills, Torit, and Kapoeta, and ends in a mountainous landscape at Nadapal. Road conditions are fair to poor. Work funded by United Nations World Food Program (UNWFP) and carried out by German Technical Cooperation–International Services (GTZ-IS) has improved conditions somewhat. Demining is complete and the road is considered safe and trafficable. In the rainy season, the eastern end of the road is frequently blocked due to heavy rain storms and flooding of waterway crossings.

Overall, the road is in fair condition, mostly flat paved or with smooth loose gravel surface. Concrete drainage pipes mitigate flooding risk in the most vulnerable segments. In the rainy season, multiple sections of the road deteriorate to a very poor condition, increasing the probability of delays from flooded waterway crossings. Journey times usually increase by 2 to 4 hours. Bridges are generally trafficable, and structures that were destroyed by bombs during the conflict years have been used as base to refurbish bridges

In our trip from Juba to Torit, we observed very few commercial trucks coming from Kenya. Interviews conducted en route and in Juba indicate that poor road conditions and security problems

on the Kenyan side of the corridor, particularly between Lodwar and Lokichokio, make the road unattractive for commercial trucks.

### *Juba – Nimule Road*

The Juba–Nimule road is the most important segment of the entire primary road network that connects South Sudan with neighboring countries and the Port of Mombasa. During the last years of the civil war, the road was heavily mined and remained closed until 2006, almost a year after the signing of the Comprehensive Peace Agreement (CPA) in 2005. In 2007, the SPLA assumed tighter control of the corridor, enhancing security and allowing reactivation of regular transport activities.

The Juba–Nimule road is 192 km long and crosses the states of Central and Eastern Equatoria. In November 2008, under a USAID project, the Louis Berger Group was hired to rebuild the road and build an all weather sealed highway, including paving with double bituminous seal treatment (DBST). The works were divided in three segments to facilitate reconstruction. After multiple delays, the current schedule for paving works envisions completion of the first segment of 55 km by August 2011, the second segment of 70 km by December 2011, and the third segment of 67 km by February 2012. This schedule has suffered additional setbacks and none of the segments are presently completed. Eight bridges had to be built to make the route operational. Seven were finished by August 2009 and the eighth, at the border with Uganda, started in November 2010.

Once reconstruction is complete, travel times between Juba and Nimule are expected to be reduced from 8 hours to about 2.5. At the time of our field visit, October, 2011, the travel time to the border post was still 8 hours. The increase in traffic volumes and average speed along the segment has resulted in a number of transit accidents. Part of the reconstruction project includes safety improvements

Juba Bridge is a major delay for traffic entering the city, as the trucks from opposite directions have to wait and queue to go through a single lane because of the weight restrictions on the bridge.

### *Kaya –Yei – Juba Road*

The Kaya–Yei–Juba road is 235 km long, and crosses sparsely populated regions of Central Equatoria. The period of civil war severely disrupted transport activities along the corridor. The signing of the CPA brought stability to the region and revived the corridor's role as commercial route for South Sudan.

The distance from the Ugandan border at Kaya to Yei/Maridi Junction is 81 km and the distance from Yei/Maridi Junction to Juba is 154 km. In general, the surface of the road is poor with more than 50 percent presenting a rough and uneven surface of loose gravel. The paved sections are severely deteriorated. The road is very vulnerable to flooding and during the rainy season its general condition is very poor. The outskirts of major settlements and towns (e.g., Juba, Lainya, Yei, and Kaya) are characterized by an increase in lighter traffic, particularly motorcycles.

The volume of traffic is growing rapidly. The road has substantial traffic of heavy vehicles carrying bulk loads or containers and other goods primarily to Juba for further distribution throughout South

Sudan. The vast majority of cargo flowing through this corridor is originated in Uganda. Other volumes of cargo are originated in Kenya primarily Nairobi and Mombasa. Juba's growth is the main driver for the development of urban settlements along the corridor. Yei's growth is not solely associated with Juba's growth; Yei serves as a diverting point for cargo entering via Kaya going towards areas to the west and north of the country such as Rumbek and Wau. Another important factor that increases the use of the Kaya route is the absence of weight controls for trucks. Trucks coming from Yei do not use the bridge and therefore, transporters moving goods from Kampala are able to overload trucks.

### *Segments within Kenya and Uganda*

The portion of the corridors outside of South Sudan was thoroughly assessed in the Action Plan prepared as part of the Corridor Diagnostic Study for the Northern and the Central Corridors of East Africa.

In terms of terrain most of the corridor in Uganda and Kenya is flat or hilly and road surface is paved and in fair condition. Although congestion is significantly higher, particularly near urban centers, than in South Sudan, road conditions allow vehicles to circulate on average at double the speed than South Sudanese road network. There are specific segments that are in very poor conditions and that also present serious threats in terms of security. The description of the issues these segments and their impact in the overall performance of the corridor are presented in Chapter 4.

## **BORDER CROSSINGS**

Border crossings in the region are characterized by poor infrastructure, lengthy paperwork, inadequate coordination and congestion. There are four relevant border crossings for the South Sudan corridors that were analyzed: (i) Kaya / Oraba, (ii) Nimule / Bibia between South Sudan and Uganda, (iii) Nadapal / Lokichokio between South Sudan and Kenya, and (iv) Malaba between Uganda and Kenya (see Figure 2-5 above).

The busiest and most congested border on the route is at Malaba. One stop border post (OSBP) operations are being introduced on all the Northern Corridor borders with support from the World Bank and African Development Bank as part of the East Africa Trade and Transport Facilitation Project. However, the only border post relevant to South Sudan traffic that is being upgraded under this project is Malaba.

Border crossings between South Sudan, Uganda and Kenya lack a defined legal framework, precise legal jurisdiction, operating principles and methods of coordination. South Sudanese control and approval procedures are not coordinated and roles and jurisdictions of border agencies are unclear. Even when cargo clearance is done prior to arrival to the border, procedures are slow, inefficient and costly. The border posts on the South Sudan side do not operate 24 hours a day, so when trucks arrive after 5 pm there is an automatic delay of at least 12 hours until the border post is reopened. Clearance procedures and waiting times as well as their associated costs are highly variable.

In the following discussion of corridor performance, we include within the border component the cost and time spent at the border plus the average time at the final inland clearance point. In terms of improving facilitation on the South Sudanese corridors, both control points are important.

Cargo is significantly imbalanced in favor of imports; South Sudan exports are almost non-existent and as a result almost all of the return hauls are empty.

## **RIVER TRANSPORT**

The potential for river transport of passengers and goods has not been realized in South Sudan, though river transport is key to intermodalism. In many areas of South Sudan not accessible by road, river transport is the only practical and cost-effective way to reach communities along the White Nile and its tributaries. The river, however, is seriously silted and its transportation capacity curtailed. Draft constraints impede navigation and the river needs to be dredged to expand capacity. Other river transport problems include advanced fleet age, navigation difficulty due to riverbed weed growth, lack of navigation aids, and insufficient river port equipment and facilities.

Along the southern reach from Kosti are 15 ports, all of which require rehabilitation. The government considers them all a priority but the resources necessary for rehabilitation require a phased implementation strategy. River ports like Juba, Mongalla, Bor, Adok, Shambe, Malakal and Renk would obviously be among the first to be rehabilitated or upgraded.

To foster mobility and trade by the Nile River, the government feels it is necessary to establish managerial entities, to dredge 1,500 km of navigable channels, and to provide navigation aids, comprehensive docking facilities, and cargo handling facilities.

## **AIR TRANSPORT**

The existing air transportation infrastructure is clearly insufficient to support South Sudan's development, particularly considering that the country is landlocked; both cargo and passenger services are currently scarce and expensive when compared to regional standards. There is only one international airport at Juba, which is yet to comply with International Civil Aviation Organization (ICAO) safety standards. Additionally, there are 21 airfields across the country.

Air services are critically important for domestic and external communications. One of the immediate challenges is the underserved air transport services, with Juba as the only airport that receives international flights and a few flights to other airports and air strips in the country. An initial requirement in the post-conflict period is to create an enabling institutional environment for the emergence of air transport system on a commercial and competitive basis. Immediate requirements include rehabilitation and construction of selected airports and airstrips, installation of facilities, and capacity building to ensure adequate personnel for the air traffic control and manning and operation of the airports.

## **RAILWAY TRANSPORT**

Sudan railways were one of the longest networks in Africa and Middle East. With a total length of 4,578 km of single mainlines and 1,323 km of branch lines with 1,067 mm. gauge. Construction of railway started in 1897 and most of the lines were completed before 1930.

The vast majority of South Sudan's territory was never integrated to the Sudanese railway network. The network extends from Port Sudan to the east via Atbara to Khartoum with an alternate line from Port Sudan via Haiya and Kassala to Sennar. The northern segments connect Karima and Wadi Halfa and the west links Sennar via Kosti to El Obied and El Rahad to Babanousa and Nyala. The only segment connecting the south arrives to Wau and was completed in 1962. The segment was uprooted and remained closed during the civil war.

The railway to Wau operated at less than 30 percent of capacity due to lack of maintenance and aging equipment. Between 2007 and 2009, the Sudanese Railway Corporation initiated a project to rehabilitate the segment between Babanous and Wau and reestablish the link with Khartoum and Port Sudan. However the project was never completed and the last 9 km (on the Wau end) of gauge are non-operational.

At present, railways development in South Sudan is at a planning stage that will examine (1) challenges to and the potential impact of rail connections between major urban and trade areas of the country, (2) the need to rebuild lines between Babanousa-Aweil-Wau (400km) and extend the line further to the south, (3) the need for a new railway line connecting Juba to Mombasa or Lamu ports through Uganda and Kenya, (4) other possible links with Ethiopia and DR Congo, and (5) construction of a connection to the existing narrow gauge railway that connects Mombasa to Pakwach in Uganda . The government may consider establishing a railway management institution to advise, regulate, and direct rail development

## 3. Corridor Performance

In this section, we first present our assessment of the performance of South Sudan’s four main corridors for imports. We then compare this performance with that of the Northern Corridor overall. This assessment provides a framework for detailed logistics analysis conducted with FastPath®. The logistics analysis uses three variables that define the performance of transportation networks: time, reliable completion of a shipment, and price (from the perspective of shippers of cargo—producers and importers, and transporters, clearing and forwarding agents).

Our analysis divides the transport network into nodes and links. Links are route segments with unique characteristics (e.g., terrain, road surface condition, lane width, congestion level), and nodes represent the port, border posts, and intermediate urban or semi-urban areas. Information on nodes covers their physical characteristics and operations. For example, information on the port covers the channel, the berth, the yard, customs clearance, and the gate. Information on links includes modal-oriented information that defines performance (e.g., capacity, topography, price, and travel time).

### Performance Data: Nodes and Links

For purposes of this study, we define South Sudan’s corridors as shown in Figure 1-1 and Figure 2-5. Most cargo comes from the Port of Mombasa, Nairobi, and Kampala. With this in mind, we selected routes for their importance to cargo transportation and selected nodes for their proximity to population and industrial centers as well as consolidation and redistribution centers. The most important nodes are the port and border posts. The links are road segments only.<sup>1</sup> Analysis of logistics performance in the corridor focuses on 20-foot containers, 40-foot containers, and bulk cargo for imports and exports.

#### PORTS

Examination of the port node focuses on elements common to cargo processing in modern ports: the entry channel, the berth, storage yard, customs, terminal handling, and the gate. Because several

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<sup>1</sup> There are no railway connections to South Sudan from the Northern Corridor; an extension from Uganda is being considered as well as a long term plan for a rail connection to the proposed Lamu port. For the future traffic assignment, an intermodal connection road-rail was assumed near Gulu assuming the rehabilitation of the Packwach line.

activities take place simultaneously, not sequentially, we distribute cost and time among these elements so totals match what was reported during the interviews. We then consolidate information to represent the three performance assessment variables of price, time, and reliability (measured as the range of time in which an activity can be completed).

Table 3-1 presents data pertaining to the import of 20-foot containers, 40-foot containers, and bulk cargo. For example, on average it costs US\$297 and takes 289 hours (12 days) to import a 20-foot container at the Port of Mombasa. The process can take as little as 73 hours (3 days) or as long as 470 hours (20 days). One element in this process, terminal handling, costs US\$162 and takes 24 hours to complete on average (the range is 4-48 hours). The price for a 40-foot container is 1.5 times the cost of a TEU.

As mentioned above, the average dwell time of a container is 289 hours or 12 days. Containers spend the most time at the storage yard, 120 hours or 5 days. For break bulk cargo, price per ton is US\$19, representing approximately US\$380 per truck load (assuming an average of 20 tons per truck load). Average processing time inside the port for break bulk cargo is 313 hours (13.5 days); and most of that time is spent in storage areas (144 hours or 6 days).

Table 3-1  
*Port Data for Imports to South Sudan*

Mombasa	Price per Unit (US\$)			Average Time (hours)		Max. Time (hours)			Min. Time (hours)		
	20"	40"	BB	20" and 40"	BB	20"	40"	BB	20"	40"	BB
Port Channel	--	--	--	48	48	72	--	72	--	--	24
Berth	60	90	13	48	48	72	72	72	24	24	24
Storage - Yard	--	--	--	120	144	180	648	216	24	72	72
Customs and Agents	75	113	6	48	48	96	72	72	24	24	24
Terminal Handling	162	240	--	24	24	48	48	36	--	--	12
Gate	--	--	--	1	1	2	2	2	1	1	1
<b>Total</b>	<b>297</b>	<b>443</b>	<b>19<sup>1</sup></b>	<b>289</b>	<b>313</b>	<b>470</b>	<b>842</b>	<b>470</b>	<b>73</b>	<b>121</b>	<b>157</b>

Note 1: Port values is reported per ton.

SOURCE: Prepared by Nathan Associates Inc.

## BORDER POST

Border posts are another important node along the logistics chain. During our field visit, we collected data on four posts: (i) Kaya/Oraba, (ii) Nimule/Bibia, both between South Sudan and Uganda; (iii) Nadapal/Lokichokio between South Sudan and Kenya; and (iv) Malaba, between Uganda and Kenya (see Figure 2-5 for the location of the border posts). Border controls, payments, and procedures are not standardized or consistent in South Sudan, which complicates analysis. (Institutional and regulatory conditions are discussed in Chapter 4, below.)

Customs clearance at the border can represent significant delays. For example, border posts on the South Sudan side do not operate 24 hours a day, so when trucks arrive after 5 pm they must wait at

least 12 hours to begin processing when the post reopens. In addition, clearance procedures and waiting times, as well as associated costs, are highly variable.

Table 3-2 presents data collected on the performance of the border posts. We analyzed two operational components of each post: immigration and customs. Our data indicate that Nadapal is the most expensive and time-consuming post, that Malaba is the least expensive, and Nimule the fastest. When we compare costs for containerized cargo we see that Nadapal is four times more expensive than Malaba, Nimule three times as expensive, and Kaya twice as expensive. Nadapal's processing time is roughly double that of the other border posts.

Table 3-2  
*Border Post Data for Containerized Cargo*

Node / Component	Price per Trip (US\$)		Average Time	Max. Time	Min. Time
	Containers	Break Bulk			
<b>Malaba</b>					
Immigration	25	25	16	24	1
Customs	52	52	10	15	1
<u>Total</u>	77	77	26	39	1
<b>Nadapal</b>					
Immigration	100	118	24	48	1
Customs	250	295	24	48	1
<u>Total</u>	350	413	48	96	1
<b>Nimule</b>					
Immigration	75	89	16	28	1
Customs	200	236	8	14	1
<u>Total</u>	275	325	24	42	1
<b>Kaya</b>					
Immigration	66	78	18	27	1
Customs	100	118	8	16	1
<u>Total</u>	166	196	26	43	1

SOURCE: Prepared by Nathan Associates Inc.

Clearance and transit times for non-exempted goods compared to duty exempted goods are much higher. Exemption letters issued by the Ministry of Finance and Economic Planning must be obtained for every shipment coming to South Sudan. The exemption process occurs before goods arrive and takes 15 days.

South Sudan's border posts share a similar set of problems and most delays stem from the lack of a standard and well-structured clearance process. Fundamental issues include the following:

- Undefined legal and regulatory frameworks for duty requirements, procedures, tariffs and documentation
- Unpublished tariffs, requirements, and information on clearance
- Undertrained customs officials and understaffed customs offices
- High rate of goods verification (currently 100 percent)
- Uncoordinated border clearance activities among customs, state-level authorities, police, Ministry of Commerce

- Inadequate office supplies, materials and equipment, including computers for clearance
- Client-caused delays, such as not having letters of exemption or paying customs duty and other taxes at the border late.

## ROAD

In evaluating each road link, we entered into FastPath® data on physical characteristics and on price, time, and reliability. Physical data cover distance, terrain type (flat, hilly and mountainous), surface condition (good, fair, poor and very poor), and congestion level (high and low). These data are used to estimate a weighting factor for distributing cost among road links for each road transport alternative. Performance data include cost as a total for the link or per km, total time in the link (including wait time), wait time (including rest stops), and maximum and minimum ranges for speed and wait time.

Tables 3-3 to 3-6 present road link data on each of our four corridors. A combination of difficult terrain and congestion makes the Nairobi–Eldoret segment the most expensive of all alternatives.

It takes 187 hours, or 8 days, to travel Mombasa and Juba via Kampala (see Table 3-3). Congestion and the presence of multiple small urban areas cause the Tororo–Kampala segment to have longest waiting time on average on this route.

It takes 177 hours, or 7 days, to travel between Mombasa and Juba via Kaya (see Table 3-4). Congestion, particularly in the port premises, causes the Mombasa–Nairobi segment to have the longest waiting time on average.

It takes 206 hours, or 9 days, to travel between Mombasa and Juba via Nadapal (see Table 3-5). Use of this route is very limited. According to persons interviewed, the risk associated with using this route makes it unattractive to move single TEUs. The Eldoret–Lodwar segment has the longest average waiting time of 14 hours per trip.

It takes 163 hours, or 7 days, to travel directly between Mombasa and Juba (Table 3-6). Congestion, especially at the port, causes the Mombasa–Nairobi segment to have the highest waiting time on average.

Table 3-3

*Road Data for Containers and Break Bulk, Juba via Kampala*

Segment	Distance	Terrain	Condition	Congestion	Cost (TEU/km)	Cost (FEU/km)	Cost (TL/km)	Average Trip Time (hours)	Average Wait Time (hours)	Max. Speed (km/hr)	Min. Speed (km/hr)	Max. Wait Time (hours)	Min. Wait Time (hours)
Mombasa-Nairobi	480	F to H	F	H	2.73	4.49	3.71	25	13	60	30	19.5	0
Nairobi-Eldoret	327	H to M	F	H	3.44	5.66	4.68	18	10	60	30	15	8
Eldoret-Webuye	72	H	F	H	2.96	4.88	4.04	3	1	60	30	1.5	0
Webuye-Malaba	67	H	F	H	2.96	4.88	4.04	13	11	60	30	16.5	8
Malaba-Tororo	20	H	F	H	2.96	4.88	4.04	1.1	0.5	60	30	0.75	0
Tororo-Kampala	219	F	G	H	2.37	3.90	3.23	20	14	60	30	21	0
Kampala - Gulu	332	F to H	P	L	1.54	2.54	2.10	26	12	60	20	18	0
Gulu - Nimule	126	F to H	VP	H	2.96	4.88	4.04	9	1	60	20	2	1
Nimule - Juba	192	F to H	P	L	1.54	2.54	2.10	8	1	60	20	12	1
<b>Total</b>	<b>1835</b>							<b>123.1</b>	<b>63.5</b>				

Table 3-4

*Road Data for Containers and Break Bulk, Juba via Kaya*

Segment	Distance	Terrain	Condition	Congestion	Cost (TEU/km)	Cost (FEU/km)	Cost (TL/km)	Average Trip Time (hours)	Average Wait Time (hours)	Max. Speed (km/hr)	Min. Speed (km/hr)	Max. Wait Time (hours)	Min. Wait Time (hours)
Mombasa-Nairobi	480	F to H	F	H	3.11	4.67	2.90	25	13	60	30	19.5	0
Nairobi-Eldoret	327	H to M	F	H	3.92	5.89	3.65	18	10	60	30	15	8
Eldoret-Webuye	72	H	F	H	3.38	5.08	3.15	3	1	60	30	1.5	0
Webuye-Malaba	67	H	F	H	3.38	5.08	3.15	13	11	60	30	16.5	8
Malaba-Tororo	20	H	F	H	3.38	5.08	3.15	1.1	0.5	60	30	0.75	0
Tororo - Lira	275	H	VP	H	3.65	5.49	3.40	18	2	60	10	6	0
Lira - Arua	316	H	VP	L	2.03	3.05	1.89	20	1	60	10	4	0
Arua - Kaya	62	H	VP	L	2.03	3.05	1.89	7	1	60	10	1.5	0
Kaya - Yei	92	H	VP	L	2.03	3.05	1.89	12	4	40	5	6	0
Yei - Juba	143	H	VP	L	2.03	3.05	1.89	12	4	40	5	6	0
<b>Total</b>	<b>1854</b>							<b>129.1</b>	<b>47.5</b>				

Table 3-5

*Road Data for Containers and Break Bulk, Juba via Nadapal*

Segment	Distance	Terrain	Condition	Congestion	Cost (TEU/km)	Cost (FEU/km)	Cost (TL/km)	Average Trip Time (hours)	Average Wait Time (hours)	Max. Speed (km/hr)	Min. Speed (km/hr)	Max. Wait Time (hours)	Min. Wait Time (hours)
Mombasa-Nairobi	480	F to H	F	H	N/A	7.68	3.78	25	13	60	30	19.5	0
Nairobi-Eldoret	327	H to M	F	H	N/A	9.68	4.76	18	10	60	30	15	8
Eldoret-Lodwar	382	F to H	VP	L	N/A	4.67	2.30	44	14	50	10	21	0
Lodwar-Nadapal	245	H	VP	L	N/A	5.01	2.46	30	12	50	10	18	1
Nadapal - Kapoeta	89	H	VP	L	N/A	5.01	2.46	11	4	50	10	6	1
Kapoeta - Torit	143	F	VP	L	N/A	4.34	2.13	12	2	50	10	3	1
Torit - Juba	132	F	P	L	N/A	4.00	1.97	10	1	50	10	1.5	1
<b>Total</b>	<b>1798</b>							<b>150</b>	<b>56</b>				

Table 3-6

*Road Data for Containers and Break Bulk, Juba Direct*

Segment	Distance	Terrain	Condition	Congestion	Cost (TEU/km)	Cost (FEU/km)	Cost (TL/km)	Average Trip Time (hours)	Average Wait Time (hours)	Max. Speed (km/hr)	Min. Speed (km/hr)	Max. Wait Time (hours)	Min. Wait Time (hours)
Mombasa-Nairobi	480	F to H	F	H	2.30	3.89	3.63	25	13	60	30	19.5	0
Nairobi-Eldoret	327	H to M	F	H	2.90	4.90	4.57	18	10	60	30	15	8
Eldoret-Webuye	72	H	F	H	2.50	4.22	3.94	3	1	60	30	1.5	0
Webuye-Malaba	67	H	F	H	2.50	4.22	3.94	13	11	60	30	16.5	8
Malaba-Tororo	20	H	F	H	2.50	4.22	3.94	1	0	60	30	0.75	0
Tororo - Gulu	429	H	VP	H	2.70	4.56	4.26	37	12	60	30	18	0
Gulu - Nimule	126	F to H	VP	H	2.50	4.22	3.94	9	1	60	30	1.5	0
Nimule-Juba	192	F to H	P	L	1.30	2.20	2.05	8	1	60	20	12	1
<b>Total</b>	<b>1713</b>							<b>114</b>	<b>49</b>				

SOURCE: Prepared by Nathan Associates Inc.

## Overview of South Sudan Corridor Performance

Data entered into the FastPath model is used to produce summaries of corridor performance that can be broken down for further analysis. Below are summaries of imports of each type of cargo analyzed.

### IMPORTS

Table 3-7 shows route price, time, and reliability for various types of cargo shipped via road from the Port of Mombasa. The reliability indicator reflects a range of time with respect to the average time it takes to complete each part of the logistics chain. The higher the value of the reliability indicator the greater the variation and the likelihood of long delays.

Table 3-7  
*Road Corridor Performance for Imports by Cargo Type and Destination, 2010*

Destination	Distance Km.	Price US\$				Time Hrs. per Truck		Reliability Indicator (%)	
		Containers		Bulk		Containers	Bulk	Containers	Bulk
		20"	20" Heavy	40"	Dry (per TL.)				
Juba via Nadapal	1,798	N/A	12,248	12,248	12,395	487	511	174	196
Juba Direct	1,713	4,814	7,426	7,845	7,363	453	477	185	209
Juba via Kaya	1,854	6,094	7,994	9,041	5,833	470	494	179	202
Juba via Kampala	1,835	5,251	7,852	8,376	7,093	462	486	181	205
<u>Port Node<sup>1</sup></u>									
Mombasa		297	297	443	19 <sup>2</sup>	289	313	287	316

Note 1: Port values are included in the destination values.

Note 2: Port values are reported per ton.

SOURCE: Nathan Associates

The most popular route, Juba Direct (via Nimule) is also the least expensive for all types of cargo analyzed. The least popular, Juba via Nadapal, is the most expensive. According to the interviews, less than 2 percent of imports arrive in South Sudan by this route. Transporting a container along the Nadapal corridor costs US\$6.81 per km, compared to US\$ 4.33 in the Juba Direct alternative. This means Nadapal is 60 percent more expensive than the direct route. Note also the low cost of transporting bulk cargo via Kaya (US\$3.14 per km) versus the cost via Kampala (US\$4.86 per km). The absence of weight restrictions on the Kaya route allows truck owners to overload their equipment, increase their productivity, and offer lower prices to customers. In the long run, however, regular overloading is unsafe and drives up maintenance costs.

The cost of transporting a light 20-foot container via Juba Direct or via Kampala is roughly 65 percent of the cost of transporting a heavy one, and the cost of transporting a light container via Kaya is 76 percent of the cost of transporting a heavy one. Meanwhile, costs and delays on the Nadapal route make it so inefficient that no one uses it to transport light 20-foot containers. Road conditions to Juba via Kampala and Direct, allow transporters to carry two light TEUs in one lorry, and some of the resultant savings are reflected in lower consumer prices. Road and security conditions on the Nadapal and Kaya alternatives make it impossible to use a single truck for two light containers.

Total travel time varies with the number of border crossings and length of delay (if any) at final clearance. Containers spend less time at the port than bulk cargo because most containerized cargo is “aid cargo” (unbound) and subject to relatively straightforward clearance procedures. The fastest route for cargo going to Juba is the Direct route; it takes on average 18.9 days (453 hours) for the cargo to reach its destination after being offloaded at the port. The slowest route is via Nadapal; it takes an average of 20.3 days (487 hours). Even though the Nadapal alternative has only one border crossing and the second shortest distance, it has the longest travel time—a fact that highlights the impact of performance in the Eldoret–Lodwar–Nadapal segment.

The port has, by far, the greatest range of time variation in the transport logistics chain and is therefore the most unreliable part of it. Generally, road transport is the most reliable part of the chain. As a result, the longer the road travel distance the lower the overall unreliability indicator since the relative weight of the road transport reliability index increases.

## EXPORTS

During our field work, we were not able to secure information about export flows from South Sudan to neighboring countries or to Mombasa. Anecdotal data suggest that low volumes of timber (teak and mahogany wood), scrap metal, and hides and skin are traded sporadically in the border regions, but official or verifiable data on this kind of trade are scarce. Based on interviews with shippers, current flows of cargo are not subject to significant scrutiny and delays at the border. Since the export volumes are minimal, there are no formal procedures in place at the borders. It is expected that until the oil pipeline is operational, crude oil will constitute the bulk of exports along the corridor. Oil products are treated as a priority when clearing cargo at the border posts. As South Sudan trade increase, other exports will face similar constraints to what was observed in the East Africa CDS for landlocked countries such as Uganda, Rwanda and Burundi<sup>2</sup>. We therefore did not perform a FastPath analysis specifically for South Sudan exports. As the East Africa CDS findings indicate, lack of exports creates significant empty returns, which combined with high operating costs, insecurity and delays increase the overall road transport price.

## South Sudan Corridor Cost and Time Composition

This section presents our performance assessment for 20-foot light containers, 40-foot containers, and bulk cargo. Analytical results are presented for imports for the selected routes connecting Juba and the Port of Mombasa. Figures 3-1, 3-2 and 3-3 show the participation of each component (links and nodes) in the total costs and time for respective route.<sup>3</sup>

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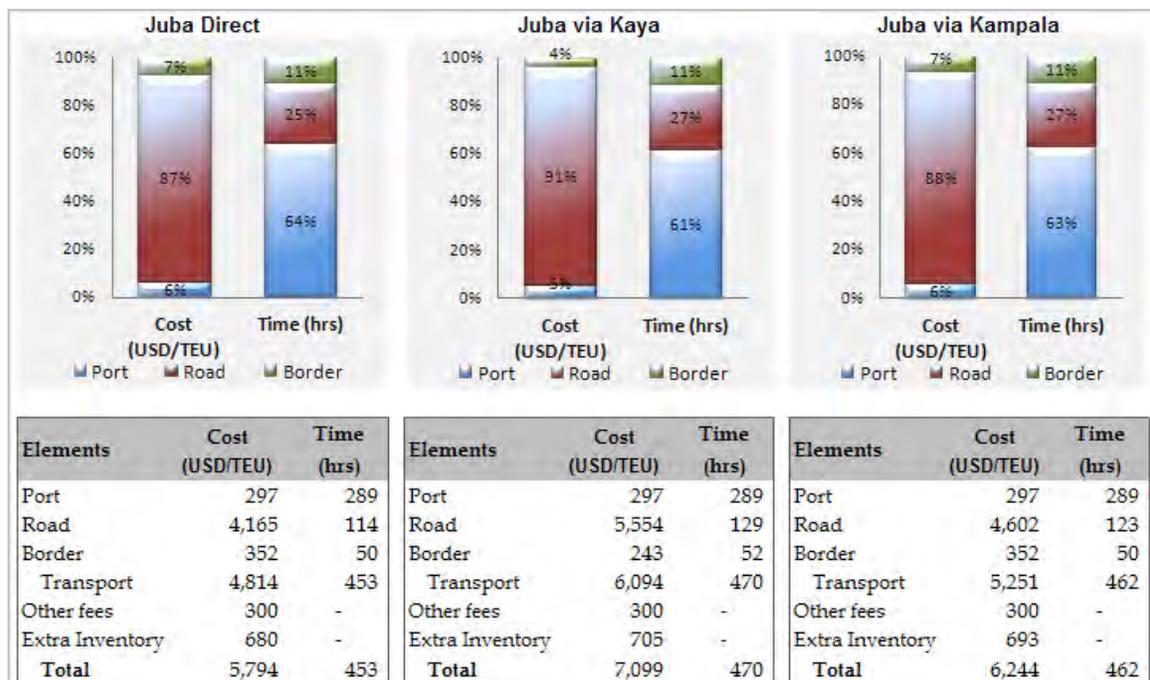
<sup>2</sup> For further information on export performance please refer to page 22 of the Action Plan Corridor Diagnostic Study of the Northern and Central Corridors of East Africa

<sup>3</sup> Tabular data in the figures are the actual values of each component and include the estimated facilitation and extra inventory costs. The extra inventory cost is the estimated value of additional goods that corridor users have to move through the system to maintain an uninterrupted supply/provision for their regular operations. All percentages related to cost in the figures are based on transport costs only.

## IMPORT COSTS FOR CONTAINERIZED CARGO

All the transport alternatives considered for the analysis of South Sudan's connectivity with Mombasa and the EAC region are based on road connections. Figures 3-1 and 3-2 show detailed analysis for 20-foot light and 40-foot containers. Total transport costs break down as follows: (1) road transport levies are 87 percent to 94 percent of road transport costs on all routes, a range similar to those observed in other subcorridors of the Northern Corridor (where costs levies can make up more than 90 percent of costs); (2) border post costs are between 4 percent and 7 percent; and (3) port costs are between 4 percent and 6 percent. No 20-foot containers go to Juba via Nadapal, so Figure 3-1 presents no data for that route.

Figure 3-1  
Cost and Time for Corridor Destinations—Imports, 2010 (Light TEU)



SOURCE: Nathan Associates Inc.

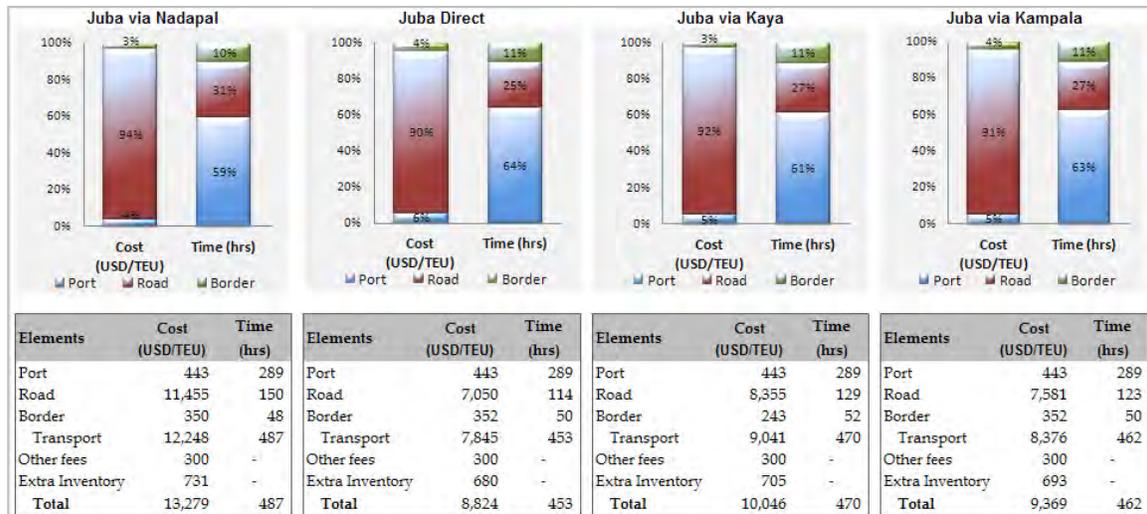
## IMPORT TIMES FOR CONTAINERIZED CARGO

Because all containerized cargo is subject to similar processes at the port and at border posts, time distribution varies largely because of differences in distance. For each route, the lion's share of time is spent at the port, from 59 percent and 64 percent of the total. Time spent on the road—where average speeds on multi-lane paved segments average 40 km/hr and on badly deteriorated segments 11 km/hr—claims 25 percent to 27 percent of total time.

Time spent at border posts as a portion of total time seems similar on all routes, but the Nadapal route has only one border crossing while the others cross at Malaba and Nimule. Therefore (and given that total distances for all alternatives are similar) trucks at the Nadapal border post spend double the amount of time there than trucks at other border posts. Juba Direct is then not only the least expensive

route for containerized cargo, including freight forwarding and extra inventory costs, but also the fastest.

Figure 3-2  
Cost and Time for Corridor Destinations—Imports, 2010 (FEU)



NOTE: Port costs reflect handling of one FEU. The road transport costs reflect a full truck load which can be two TEUs or one FEU.

SOURCE: Nathan Associates Inc.

## IMPORT COSTS AND TIMES FOR BREAK BULK CARGO

Figure 3-3 presents detailed results for break bulk cargo. As with containerized cargo, road transport levies represent by far the largest portion of the total transport costs, between 88 percent and 94 percent on all routes.<sup>4</sup> Border post costs are between 3 percent and 6 percent, and port costs are between 3 percent and 7 percent of total costs.

As with containerized cargo, break bulk is subject to similar transport processes at the port and border posts time distribution varies because of differences in distance. Again, for each route, the lion's share of time is spent at the port, from 61 percent and 66 percent of the total. Time spent on the road claims from 24 percent to 29 percent of the total. Break bulk's time at border posts (9 percent – 11 percent of total time) is subject to the same conditions as containerized cargo, as described above.

The fastest route for break bulk cargo is Juba Direct; the least expensive (including freight forwarding and extra inventory costs) is via Kaya. As mentioned earlier, the absence of weight restrictions on this route allows truck owners to overload equipment and offer lower prices to customers.

<sup>4</sup> Considering the wide variety of products being transported and therefore the different volume occupied in the trucks, our analysis assumes a generic net truck load of 20 tons.

Figure 3-3

*Cost and Time for Corridor Destinations – Imports, 2010 (Break Bulk)*



SOURCE: Nathan Associates Inc.

## Interpretation of Results for South Sudan Corridor

### PORT OF MOMBASA

Similar to our analysis of the Northern Corridor, our analysis of road alternatives between Juba and Mombasa shows consistently that the greatest share of the time is spent at the Port of Mombasa. Table 3-8 shows that import cargo spends most of its time in the yard (containerized cargo) and in storage areas (break bulk); this component is also the most expensive. The components with the next share in time are the channel, the berth, and customs clearance.

Table 3-8

*Mombasa Port Performance, Imports*

Mombasa	Price per Unit (US\$)			Average Time (hours)		Reliability (%)	
	20"	40"	BB <sup>1</sup>	20" and 40"	BB	Containers	BB
<b>Total</b>	<b>297</b>	<b>443</b>	<b>19</b>	<b>289</b>	<b>313</b>	<b>287</b>	<b>316</b>
Port Channel	--	--	--	48	48	150	150
Berth	60	90	13	48	48	100	150
Storage - Yard	162	240	--	144	168	133	150
Customs and Agents	75	113	6	48	48	150	150
Gate	--	--	--	1	1	100	100

Note 1: Port values is reported per ton.

SOURCE: Nathan Associates Inc.

Ship waiting in Mombasa is often three to four days. Crane productivity at the specialized terminal is about 10 moves per crane-hour. Since ships are mostly served by one crane, this also indicates berth productivity. Larger ships, with 1,500 moves per call, are served part of the time by two cranes, reaching berth productivity of 15 moves per berth-hour. Berth productivity at the conventional terminal is not much different than that at the specialized terminal, since ships work with their

onboard cranes, usually three or four cranes at the same time, each achieving about four moves per hour. The resulting berth productivity is 13–14 moves/berth-hour.<sup>5</sup> The reasons for the low productivity indicated by Mombasa lines are yard congestion, traffic jam inside the terminal, equipment breakdown, shortage of equipment, lack of modern Terminal Operating System (TOS), and labor motivation.<sup>6</sup>

## ROAD TRANSPORT

As stated before, road transport is the only viable alternative for imports going to Juba from Mombasa, Kenya and Uganda. It is clear that proximity to major urban areas such as Kampala and Nairobi is a determining factor for congestion. Others include climbing areas and border posts. It is also reasonable to argue that historically low trade flows between South Sudan and East Africa and Mombasa contribute to the lack of investment and maintenance of the Ugandan and Kenyan road segments connecting with the South Sudanese borders.

Table 3-9 summarizes price, time, and reliability information for all the road segments that make up the Mombasa to Juba corridor and for all the cargo types analyzed. Prices for road segments are different for each type of cargo; 20-foot light containers are significantly cheaper because a single truck can carry two of them. The general practice for light containers is to transport two containers per truck to fully use the truck's carrying capacity and divide costs between the two containers. Road transport costs for 20-foot heavy containers and for 40-foot are very similar since they require the use of one truck for each. Break bulk is cheaper than transporting containers for various reasons: there are more trucks to transport break bulk, the break bulk value is generally lower than containerized cargo value, and informal transporters offer significant competition.

The time and reliability are the same for containerized cargo because the trucks experience the same delays and congestion as they move through the corridor. The only exception would be fuel trucks that have priority for clearance at the border posts given their dangerous cargo. Break bulk cargo has different processing time at the Port of Mombasa and therefore time and reliability values differ from containerized cargo.

Observing the reliability values we can identify road segments with particularly poor performance. By far, reliability is worst in the Eldoret–Lodwar and the Lodwar–Nadapal segments (on the Mombasa–Juba via Nadapal route). Extremely poor road condition and insecurity both contribute to the problem. Reliability is also low on the Tororo–Gulu segment of the Mombasa–Juba Direct route and the Lira–Arua segment on the Mombasa–Juba via Kaya route because of poor road conditions and congestion. The congestion, which is the main problem, is caused by the road traveling through instead of bypassing multiple urban centers. Lastly, the Nimule–Juba segment (Mombasa – Juba Direct and via Kampala) is unreliable because of the presence of multiple irregular checkpoints. The disruption of the traffic flow caused by these checkpoints is variable and its impact is difficult to establish in a precise manner. Road conditions used to be a critical problem on this segment but the ongoing paving project has improved condition and reduced the segment's vulnerability to bad weather.

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<sup>5</sup> More recent observations, in October 2010, indicate berth productivity as low as 10 moves per hour.

<sup>6</sup> See a detailed description of current port performance in the CDS Technical Paper E. on Integration of Ports and ICDs.

Table 3-9  
Road and Border Post Performance, Imports

Segment	Distance (km.)	Price (Usd.)				Time (hrs)		Reliability (%)	
		20" Light	20"	40"	BB	Containers	BB	Containers	BB
<u>Juba via Nadapal</u>	1,798	N/A	12,248	12,248	12,395	487	511	174	196
Mombasa Port	N.A.	N/A	296	443	380	289	313	287	316
Mombasa-Nairobi	480	N/A	3,732	3,684	3,732	25	25	110	110
Nairobi-Eldoret	327	N/A	3,206	3,165	3,206	18	18	21	21
Eldoret-Lodwar	382	N/A	1,808	1,785	1,808	44	44	1,465	1,465
Lodwar-Nadapal	245	N/A	1,242	1,226	1,242	30	30	598	598
Nadapal Border Post	N.A.	N/A	350	350	413	48	48	283	283
Nadapal - Kapoeta	89	N/A	451	446	451	11	11	86	86
Kapoeta - Torit	143	N/A	628	620	628	12	12	80	80
Torit - Juba	132	N/A	535	529	535	10	10	48	48
<u>Juba Direct</u>	1,713	4,814	7,426	7,845	7,363	453	477	185	209
Mombasa Port	N.A.	297	297	443	380	289	313	287	316
Mombasa-Nairobi	480	1,102	1,793	1,866	1,741	25	25	110	110
Nairobi-Eldoret	327	947	1,540	1,602	1,495	18	18	21	21
Eldoret-Webuye	72	180	292	304	284	3	3	2	2
Webuye-Malaba	67	167	272	283	264	13	13	15	15
Malaba Border Post	N.A.	77	77	77	77	26	26	212	212
Malaba-Tororo	20	50	81	84	79	1	1	0	0
Tororo - Gulu	429	1,156	1,882	1,957	1,827	37	37	921	921
Gulu - Nimule	126	314	512	532	497	9	9	63	63
Nimule Border Post	N.A.	275	275	275	325	24	24	246	246
Nimule-Juba	192	249	405	422	394	8	8	493	493
<u>Juba via Kaya</u>	1,854	6,094	7,994	9,041	5,833	470	494	179	202
Mombasa Port	N.A.	297	297	443	380	289	313	287	316
Mombasa-Nairobi	480	1,491	2,001	2,243	1,391	25	25	110	110
Nairobi-Eldoret	327	1,281	1,719	1,927	1,195	18	18	21	21
Eldoret-Webuye	72	243	326	366	227	3	3	2	2
Webuye-Malaba	67	226	304	340	211	13	13	30	30
Malaba Border Post	N.A.	77	77	77	77	26	26	212	212
Malaba-Tororo	20	68	91	102	63	1	1	0	0
Tororo - Lira	275	1,003	1,346	1,509	935	18	18	354	354
Lira - Arua	316	640	859	963	597	20	20	625	625
Arua - Kaya	62	126	169	189	117	7	7	78	78
Kaya Border Post	N.A.	166	166	166	196	26	26	250	250
Kaya - Yei	92	186	250	280	174	12	12	190	190
Yei - Juba	143	290	389	436	270	12	12	91	91
<u>Juba via Kampala</u>	1,835	5,251	7,852	8,376	7,093	462	486	181	205
Mombasa Port	N.A.	297	297	443	380	289	313	287	316
Mombasa-Nairobi	480	1,308	2,047	2,155	1,783	25	25	110	110
Nairobi-Eldoret	327	1,124	1,759	1,851	1,531	18	18	21	21
Eldoret-Webuye	72	213	334	351	291	3	3	2	2
Webuye-Malaba	67	199	311	327	270	13	13	15	15
Malaba Border Post	N.A.	77	77	77	77	26	26	212	212
Malaba-Tororo	20	59	93	98	81	1	1	0	0
Tororo-Kampala	219	519	812	855	707	20	20	72	72
Kampala - Gulu	332	511	800	842	697	26	26	216	216
Gulu - Nimule	126	373	584	615	509	9	9	56	56
Nimule Border Post	N.A.	275	275	275	364	24	24	246	246
Nimule - Juba	192	296	463	487	403	8	8	493	493

Source: Nathan Associates



# 4. Legal and Regulatory Framework

## Overview of Legal System

### CONSTITUTIONAL ARRANGEMENTS

The Republic of South Sudan became an independent state on July 9, 2011 under the *Transitional Constitution of the Republic of South Sudan* (“the Constitution”) adopted on the same date. The Constitution introduces a decentralized form of government comprising a system of national, state, and local government. South Sudan comprises ten states. The Nimule-Juba road traverses two states, Central Equatoria State (CES) and Eastern Equatoria State (EES).

Under the Constitution, legislative and executive authority over the transport sector is shared between the national and state governments. As discussed below, this division of authority is not always clear. The potential for overlap and jurisdictional conflict is significant. As discussed in Chapter 3, the impact of this approach on road transport is severe. Road transport on the Nimule-Juba corridor is subject to multiple requirements and charges imposed by various national and state agencies. This hurts the performance of the transport corridor and raises the cost of goods transported along it.

Under the Constitution, the national government has exclusive legislative and executive authority over the following:

- “International and inter-state transport, including roads, airport, waterways, river ports and railways;
- Traffic regulations;
- River transport;
- Navigation and Shipment; and
- Civil aviation and the regulation of airspace”<sup>7</sup>.

It is also worth noting that the national government is exclusively responsible for “customs, excise and export duties, immigration, aliens and passports/visas.” This is relevant for trade and transit facilitation on the corridor.

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<sup>7</sup> Schedule A, Transitional Constitution.

State governments have legislative and executive authority over the following:

- “Intrastate public roads and transport;
- Vehicle licensing;
- Issuance of driving licenses and number plates; and
- Airstrips other than international and national airports managed by the civil aviation authority.”<sup>8</sup>

Under the Constitution, national and state governments have taxation powers. National government has authority over “national taxation and revenue” and states have the power to levy “state taxes” (based on the above, such taxes exclude customs and excise tax and export duties). However, national and state governments have concurrent powers in respect of “taxation, royalties and economic planning.” Similarly, they have concurrent powers in respect of “river transport”, “trade, commerce and industry” and “matters related to businesses, trade licenses and conditions of operation.” In the event that a conflict arises between national and state laws with regard to a matter on the concurrent list, the Transitional Constitution provides that the national law shall have effect.

## **IMPLICATIONS OF CONSTITUTIONAL PROVISIONS FOR THE TRANSPORT SECTOR**

### *Roads*

Under the Transitional Constitution, the national government is responsible for “international and inter-state roads.” States, in turn, are responsible for “intra-state roads.” The Constitution does not designate which roads fall into which class. In practice, this will follow from the adoption of a formal road classification system for which a study has recently been completed (see Chapter 3).

### *Road Transport*

The constitutional provisions relating to road transport could be confusing. On the one hand, national government is responsible for “traffic regulations.” On the other, states take care of “vehicle licensing,” “driver licensing,” and “number plates.” National government is responsible for “international and inter-state transport,” while states take care of “intra-state transport.”

The Transitional Constitution does not define these various terms. Standard principles of interpretation require that they be given their plain meaning, unless this delivers a patently incorrect result. For transport practitioners, “traffic regulations” mean rules, normally made in terms of a superior law, that regulate the use of motor vehicles on public roads.<sup>9</sup> Typically, this includes registration and licensing, roadworthiness, equipment standards, environmental standards, driver training and testing, rules of the road, enforcement, etc. As this list shows, the areas of responsibility given to the states, such as vehicle licensing, would normally be regarded as falling under “traffic regulations.” This creates a potential overlap in the jurisdiction of the national government and the states.

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<sup>8</sup> Schedule B, Transitional Constitution.

<sup>9</sup> Under the Interim Constitution of 2005, “traffic regulations” was listed as an area over which the national government (Khartoum), the government of South Sudan, and the states would exercise concurrent jurisdiction.

Whereas the distinction between international, interstate, and intrastate transport is clear, how the national government and the 10 states regulate these services may, in practice, be problematical. The basis for the distinction is whether a vehicle is undertaking a trip outside South Sudan, between states, or within the borders of one state. Depending on the nature of its business and customers, a trucking company may provide only international, interstate or intrastate services. As discussed elsewhere, it appears for example, that much of South Sudan's trucking industry is involved in purely domestic transport. Few firms make international journeys.

However, as the trucking industry matures, more firms will provide a full spectrum of services comprising domestic and international operations. A single truck may, for example, be used on a domestic trip one day and an international trip the next. Under such a scenario, it is clear that if individual states were to adopt regulations governing intrastate transport, while national government regulates inter-state and international operations, a complex web of regulations could arise. This may pose significant compliance challenges for trucking firms. An obvious by-product is likely to be increased compliance costs.

The need for clarity regarding the regulation of various types of road transport services underlines the need for a clear legal framework in the relevant road transport law. As discussed in Chapter 3, such a framework does not yet exist. Although new legislation prepared by the Ministry of Transport (MoT) (*Road Traffic and Safety Bill*), is being processed, it does not address the important dimension of international and interstate transport.

### *River Transport*

River transport is listed in the Transitional Constitution as a subsector over which national government exercises exclusive authority. At the same time, it is also listed as an area of concurrent authority between the national and state governments. The inclusion of river transport in both the exclusive national list and the concurrent list is contradictory and perhaps the result of an oversight. It implies that both national and state government may exercise authority in this subsector. This gives rise to similar concerns as those discussed above in relation to road transport.

### *Civil Aviation*

The Transitional Constitution follows international practice in reserving the regulation of civil aviation to the national government. Typically, this includes overseeing airworthiness certification of aircraft, certification of air crew, certification of airports for international and national services and air space management.

### *Customs and Taxation*

As noted above, provisions of the Transitional Constitution regarding powers of taxation have led to some overlap in national and state government revenue collection. This overlap exists in so far as collection targets the same commodities and services. While only the national government may administer customs procedures, the states' power to levy "state taxes" allows them to impose taxes akin to customs duties on commodities. Because the Transitional Constitution does not provide

guidance to ensure that national and state governments pursue complementary fiscal policies, there is the risk that various levels of government could pursue conflicting fiscal goals.

## **TRANSITIONAL ARRANGEMENTS AND PRE-INDEPENDENCE LAWS**

The Transitional Constitution expressly provides that all laws in force on July 9, 2011 shall continue to remain in force unless repealed by virtue of action under the Constitution. In the transport sector, South Sudan has “inherited” several laws that applied in the former united Sudan. As noted below, access to information about laws in force in South Sudan is restricted. Moreover, even although certain inherited laws apply, there is general resistance to recognizing these as valid. To date, our study team has been unable to source any laws of the former united Sudan, except for the *Traffic Act 2003* and the Customs Law. The former is due to be repealed once the *Road Traffic and Safety Bill* is passed.

## **ACCESS TO LAWS**

Various factors severely restrict the public availability of laws in South Sudan. All passed legislation must be published in *South Sudan Gazette*. The *Gazette* is still being printed in Kenya because South Sudan does not yet have its own government printer and the Ministry of Justice is struggling with a gazetting backlog of several recent laws. In addition, there is no online database of laws, but the Ministry of Justice is working on a project to establish such a database. At the moment, the most comprehensive source of law is the government’s website: [www.goss-online.org](http://www.goss-online.org). However, its webpage of legislation was last updated more than one year ago. Thus far, the states do not have websites that provide access to their legislation.

## **National Transport Policy**

The Government of South Sudan (GOSS) adopted a Transport Sector Policy (TSP) in October 2007. Now that South Sudan has gained independence, the intention is to review the policy, but this exercise has yet to start. Meanwhile the policy is the principal document guiding the development of the sector. It has nine focus areas:

- Road infrastructure
- Road freight transport
- Road passenger transport
- Road traffic management and safety
- Non motorized and intermediate means of transport
- River transport
- Rail transport
- Air transport
- Information and data collection.

## **ROAD INFRASTRUCTURE**

Policy guidelines for roads are driven by the very limited nature of the road network and the poor condition of most roads, which received little maintenance during the conflict years.

The policy recommends wide-ranging institutional reforms to establish road authorities to improve road development and maintenance. At the level of the national government, this recommendation has been carried out with the establishment of the South Sudan Roads Authority under the *South Sudan Roads Authority Act, 2011*. The establishment of state and urban roads authorities is also mooted.

To ensure adequate and sustained financing for roads, the policy further recommends establishing a Road Fund. The fund will be administered by a Roads Board to be funded from road user charges (fuel levy and other charges).<sup>10</sup>

Other priorities identified in the policy are as follows:

- Adopting and formalizing road design, construction, and maintenance standards.
- Building private and public sector capacity and promoting private sector participation especially through labor-based contracts.
- Establishing a regulatory framework for axle load control and rolling out a network of strategically located weighbridges (this aspect is covered in detail in the section dealing with road freight transport).

The policy also recognizes that network development should be prioritized and sequenced. In this regard, attention is to be given to improving international road corridor connections to Uganda, Kenya, and other neighboring states. Investment in road infrastructure is also identified as a priority area under the *Investment Promotion Act, 2009*.

## ROAD FREIGHT TRANSPORT

Road freight transport policy is informed by the need for competitive, efficient, and affordable road freight services in a market that has consisted largely of relief shipments with few or no backhauls. At the same time, the poor road network means that freight transport is plagued by high maintenance costs. Operations are also exposed to various security threats. The proposed policy focuses on enacting legislation to regulate and develop the industry (including training); encouraging private investment to promote inter- and multimodal transport; improving security on routes; and reducing nontariff barriers (NTBs) by establishing one-stop border posts, simplifying administrative and customs procedures, and harmonizing transport regulations with regional frameworks.<sup>11</sup> The policy also prioritizes the establishment of a regulatory framework for axle load controls (legislation, institutions, and control networks) and encouraging self-regulation. Lastly, it notes the need to limit the negative environmental consequences of road transport, particularly regarding air quality and noise.

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<sup>10</sup> The government is being encouraged to establish a Road Fund, by among others, the World Bank (WB). The study to assess the modalities for the fund is likely to be undertaken as part of an upcoming Feeder Roads Project being prepared by the WB.

<sup>11</sup> COMESA, EAC, NCTTCA and IGAD.

## **ROAD PASSENGER TRANSPORT**

Road passenger transport policy is influenced by the rapid growth of South Sudan's population and expected high urbanization rates. The policy highlights the need for integrated planning of operations, infrastructure, and land use to improve mobility, access to infrastructure and services, and urban-rural linkages. The policy proposes to organize the industry through a regulatory framework based on regulated competition spearheaded by a Transport Regulatory Board. This will require the licensing of bus, taxi, and tour operators using qualitative and safety criteria. The policy also recognizes the need for human resource development in the industry, enhanced environmental control, and promotion of energy efficiency.

## **ROAD TRAFFIC MANAGEMENT AND SAFETY**

Road traffic policy focuses on improving the overall order and discipline of road use to enhance safety, prevent loss of life or damage to property, damage to infrastructure, and the associated economic and social costs of poor road discipline. The policy identifies the need for legislation to control and manage road traffic supported by an adequate institutional framework. Such an institutional framework will comprise a Road Traffic and Safety Management Unit to coordinate and manage road safety activities under the guidance of the Ministry of Transport. Other policy priorities are as follows:

- To develop a funding policy for road traffic.
- To enact regulations that clearly define traffic offences and provide a framework for enforcement and adjudication (where possible based on decriminalization so that violations can be settled outside the courts).
- To improve driver and road user training, coordinated by the Transport Regulatory Board, which develops standards for driver licensing to ensure harmonized training and testing by the state licensing authorities.
- Develop and implement guidelines and standards for traffic planning, engineering and vehicle safety, including establishing an agency for motor vehicle inspection.
- Standardize vehicle documentation related to registration, roadworthiness, and insurance.

## **NON-MOTORIZED AND INTERMEDIATE MEANS OF TRANSPORT**

Non-motorized and intermediate means of transport (NMT and IMT) are prominent in the policy because they are important to a major part of the population. The policy focuses on ensuring the inclusion of NMT and IMT priorities in overall transport policy and planning, integrating planning for NMT and IMT with other transport modes, and promoting investment in NMT and IMT to improve affordability and mobility.

## **RIVER TRANSPORT**

River transport policy is influenced by the age and limited capacity of the river fleet, inadequate maintenance facilities, navigational restrictions due to shoals and rapids, lack of aids to navigation,

limited and inadequate port facilities, and limited human resources. Before independence, river transport fell under the national government (Khartoum). The Government of South Sudan has, therefore, only very recently assumed full executive and legislative authority for the subsector (since independence). Major policy priorities are as follows:

- To establish an inland waterway authority with responsibility for infrastructure development, aids to navigation, and registration and regulation of river transport services.
- Enact legislation that is harmonized with regional and international regulations to improve safety and environmental compliance.
- Undertake dredging to improve navigability of inland waterway routes.
- Improve equipment and infrastructure at landing stages.
- Encourage private investment in river transport services.
- Develop human resources in the subsector.

## **RAIL TRANSPORT**

There is no functioning railway system in South Sudan. The only track is a 446km link from Wau-Aweil-Babanousa. Some sections are said to be mined, while a section of about 60 km has been uprooted and stripped. At this stage, the government's policy objectives are to undertake a feasibility study that assesses the potential for railway transport and the extent to which rail can be developed as a complementary mode, especially for long haul freight transport.

## **AIR TRANSPORT**

Air transport has historically been neglected in South Sudan. Juba has the only airport developed to receive international flights, but air traffic services were, until recently still managed from Khartoum.<sup>12</sup> South Sudan joined the International Civil Aviation Organization (ICAO) in November 2011. Major policy focus areas are as follows:

- Establish a civil aviation authority and an airport development authority.
- Create a legal and regulatory framework for civil aviation based on a separation of functions between government, airport and aviation authorities, air transport operators and other private sector service providers.
- Develop air transport infrastructure.
- Promote airport and aviation safety and security.

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<sup>12</sup> With independence, ATECNA, the West African air traffic services provider, was recruited to provide technical support and training of air traffic control personnel thanks to facilitation by the Air Safety Foundation. Recently, training in air traffic control was provided by the Kenya Civil Aviation Authority (in 2008).

## INFORMATION AND DATA COLLECTION

The transport policy highlights the need for adequate data and data collection to ensure that transport policy formulation, planning, and program design, implementation, monitoring, and evaluation can be effective. At present, there are no systems for data collection. Existing data is outdated and unreliable. To rectify this situation, the policy proposes establishment of a data unit in the Ministry of Transport that will use appropriate information technology and trained staff to develop updated, high quality, and relevant data sets. This entails creating subsector databases on road traffic, road infrastructure asset management, civil aviation, and river transport.

## Transport Legal and Regulatory Framework Analysis

The legal framework for South Sudan's transport sector is still quite thin. While new legislation has been adopted relating to roads under national control (*South Sudan Roads Authority Act, 2011*), the Nathan Associates study team was unable to identify any legislation pertaining to state and lower classes of roads. Road transport and traffic are still regulated under legislation inherited from the former united Sudan (*Traffic Act, 2003*), but this is due to be repealed and replaced shortly (by the *Road Traffic and Safety Bill*). It is understood that the railways are administered in terms of the *Railways Act 1973*, but a copy could not be sourced to assess its relevance to the current situation. No river transport legislation could be identified.

## ROAD INFRASTRUCTURE

### *Legal, Regulatory, and Institutional Overview*

South Sudan is still developing frameworks to ensure the effective management of its road network. As noted in Chapter 1, responsibility for the roads subsector is shared between national and state governments. In terms of the Constitution, the former is responsible for "international and inter-state roads," the latter for "intra-state roads." Implementing this responsibility requires the road network to be suitably classified. This task was completed very recently (September 2011) as part of the Sudan Infrastructure Services Project (SISP).<sup>13</sup> Following this classification, the Nimule-Juba road is now deemed an international road (Route N1).

International and inter-state roads are the responsibility of the South Sudan Roads Authority (SSRA), which was established under the *South Sudan Roads Authority Act, 2011* (SSRA Act) as an autonomous agency under the Ministry of Roads and Bridges (MoRB). It is directly accountable to the Minister in terms of a performance agreement between the Minister and the SSRA.

The SSRA is still being established. Aside from its main responsibility to plan, construct, upgrade, rehabilitate, and maintain roads under its control, the SSRA's other duties are as follows:

- Prepare an annual road works program and a five- year road investment program.

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<sup>13</sup> USAID, *South Sudan Road Network Classification, SISP TO 8: Capacity Building Program, September 2011.*

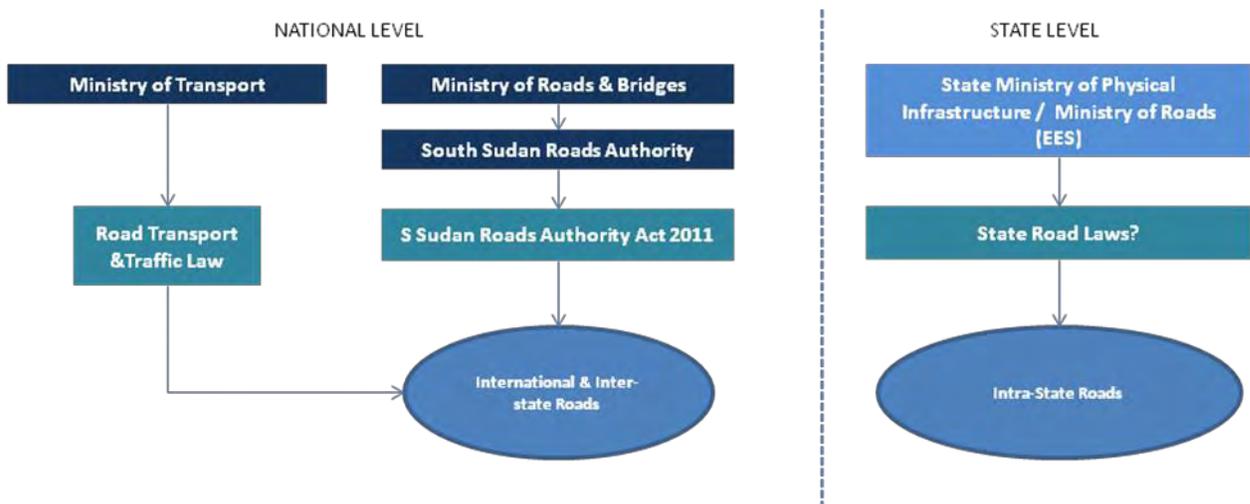
- Undertake axle load control.
- Manage traffic with regard to its services in collaboration with other government departments and agencies (MoRB, South Sudan Police Service and the Ministry of Wildlife).

The SSRA has the power to determine “rates, tolls, charges, dues or fees for any service” it performs. Although the law does not state so expressly, it appears that this power is wide enough for the SSRA to toll roads under its control.<sup>14</sup>

The SSRA is also empowered to contract out construction or maintenance “of any property” or any service it can perform. It may also appoint a private firm for the “payment, collection or apportionment of any tolls, rates, charges or other receipts” arising out of such services. Although not stated expressly, these provisions can be interpreted as allowing the SSRA to contract for a private firm to construct a road and to collect tolls.<sup>15</sup>

At the state level, responsibility for intra-state roads is assigned to Ministries of Physical Infrastructure in each state, except in Eastern Equatoria State (EES), which has a Ministry of Roads. As shown in Figure 4-1, it is not clear which laws states are applying in administering roads under their control. It is also worth noting that while the SSRA is responsible for axle load control, the regulatory framework for vehicle loads is in the *Traffic Act* (soon to be replaced by the *Road Traffic and Safety Bill*), which is not administered by the Ministry of Roads and Bridges, but by the Ministry of Transport.

Figure 4-1  
*Institutional Framework for Road Infrastructure*



<sup>14</sup> This power is subject to Sec 106 of the Taxation Act, 2009, the contents of which remain to be verified.

<sup>15</sup> If the intention of the Act had been to allow BOT / ROT type road concessions in terms of which the concessionaire raises private finance to construct or rehabilitate the road and collects tolls to repay such loans, it would have been preferable for the Act to state this expressly.

South Sudan does not yet have a vehicle overloading control program, but a start was made in 2011 to develop a program based on an overall overload control policy provide developed with USAID support under the SISP<sup>16</sup>. Four weighbridge sites have been selected: Nimule, Kaya, Nadapal, and Juba. Only at Nimule has the weighbridge pit and related accommodation been completed and the weighbridge installed (Figure 4-2). However, the approach slab and link to the main road are not yet constructed. The SISP assessment concluded that there are significant flaws related to the equipment itself and the design approach.<sup>17</sup> The weighbridges can only weigh gross vehicle mass (GVM) and not individual axle loads. This will compromise enforcement (as a vehicle may be loaded within permissible GVM limits, but overloaded on a single axle, something the weighbridge will be unable to detect). It also appears that the weighing pit walls have not been built to the required strength, and whether the pit will sustain the impact of heavy vehicles is in doubt.

Figure 4-2  
*Weighbridge and Weighbridge Operator's Building at Nimule*



SOURCE: USAID, *Policy for Overload Control in South Sudan*, October 2011.

The regulatory framework for overloading control in South Sudan is still being developed. Current rules are in the *Traffic Act 2003*, but these are expected to be replaced shortly when the *Road Traffic and Safety Bill* is passed. The current provisions of the *Traffic Act 2003* are rudimentary and inadequate for regulation and enforcement. Unfortunately, these provisions have been adopted almost *verbatim* in the proposed new law. A further deficiency is that the law does not give the Minister unambiguous power to make regulations that specify detailed limits, weighing, and enforcement procedures and penalties. These inadequacies have also been highlighted by the SISP study.

The impact of South Sudan's poor road safety record on infrastructure has already been alluded to in Chapter 2. Ideally, owners or operators of vehicles that damage roads or road furniture should be held liable to compensate losses caused. Typically, such liability is governed by appropriate

<sup>16</sup> USAID, *Policy for Overload Control in South Sudan, SISP TO 8: Capacity Building Program*, October 2011

<sup>17</sup> USAID, *Policy for Overload Control in South Sudan, SISP TO 8: Capacity Building Program*, October 2011.

provisions in roads legislation<sup>18</sup>. Such of provisions – such as those contained in South African legislation quoted in the footnote - provide for both criminal and civil liability and allows the road agency to recover damages to compensate for the losses caused. Current South Sudanese legislation (the *Traffic Act, 2003*) contains similar provisions<sup>19</sup>. Unfortunately, the *Road Traffic and Safety Bill* which will replace the *Traffic Act, 2003* has dropped this provision<sup>20</sup> and does not provide for damages to be recovered, although spillages on roads are made an offense. Moreover, the fines that may be imposed (SP 100 for a 1<sup>st</sup> offence and SP 300 for a 2<sup>nd</sup> offence) are unlikely to act as effective deterrents.

Difficulties in recovering damages are compounded by the fact that many trucks are foreign-owned and registered. The highly mobile nature of international trucking makes it difficult to apprehend offenders and hold them to account. Typically, states overcome these difficulties by concluding international agreements with their neighbors which spell out modalities for holding truck owners accountable for offenses committed while in a foreign state. Such procedures have been agreed, for example, between the EAC states<sup>21</sup>. South Sudan and its neighbors have, as yet, not concluded any agreements to regulate cross-border trucking. As a result, there are no agreed procedures whereby South Sudan could obtain assistance from regulatory authorities in neighboring states to apprehend and act against truckers from those states that violate South Sudanese laws (or commit acts that result in liability such as damaging roads).

The harmonization of overloading control strategy, legislation, and enforcement has been a longstanding goal of the East African Community (EAC) and other regional economic communities (RECs), such as COMESA and SADC. The EAC recently completed a wide ranging study on the topic.<sup>22</sup> Given the likelihood of South Sudan's eventual accession to the EAC and/or COMESA, it is a pity that the opportunity was not used to align its legislation (the *Road Traffic and Safety Bill*) with the approaches being pursued in the RECs. In a similar vein, the SISP study on an overload policy for South Sudan has also recommended alignment between Sudanese regulations and the EAC's Model Act and Regulations on overload control. Indeed, given the likelihood of South Sudan's eventual accession to EAC membership, it makes sense for the Sudanese authorities to align their regulations with the EAC model. Once South Sudan becomes an EAC member, it will be an obligation of membership to apply the EAC rules.

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<sup>18</sup> For example, Sec 46 of the South African National Roads Agency Limited and National Roads Act, 1998 states the following:

- 46. (1) Any person who damages a national road wilfully or negligently, is guilty of an offence and liable on conviction to a term of imprisonment not longer than one year, or a fine, or to both the term of imprisonment and the fine.*
- (2) (a) The court convicting a person of an offence contemplated in subsection (1) may, in addition to imposing a sentence on such a person, order that person to pay to the Agency an amount which, in the court's opinion, is equal to the amount of the damage caused.*
- (b) Such an order will have the force of a civil judgment and may be enforced in the same manner as a civil judgment*

<sup>19</sup> Sec 75 of the Traffic Act, 2003 states:-

*If any injury is caused to a bridge or road due to any contravention of this Act, the highway authority shall repair the road or bridge and recover the cost from the owner of the vehicle and the certificate of the highway authority, of the cost of repair, shall be conclusive evidence of the amount payable by such owner.*

<sup>20</sup> Road Traffic and Safety Bill

<sup>21</sup> Although the agreement is not being yet being implemented fully.

<sup>22</sup> Japan International Co-operation Agency, *Study for the Harmonization of Vehicle Overload Control in the East African Community*, September 2011 (www.eac.int).

At the same time, the SISP study rightly flags that the adoption of appropriate legislation is only one element in a range of measures required to ensure effective overload control. Given the almost complete absence of load regulation in South Sudan, the authorities face a steep challenge in putting in place the equipment, management structure, procedures and staff required for an effective program. Experience elsewhere in East Africa highlights that even countries with decades of experience in regulating loads struggle to ensure satisfactory compliance rates. The economic incentive to overload fosters corruption and undermines efforts to stamp out the practice. In South Sudan, the presence of large number of foreign vehicles involved in road transport creates additional difficulties. The absence of effective market entry regulation compounds the problem. In addition to the measures recommended in the SISP study, which are fully supported, it will be necessary to create additional frameworks to regulate liability focusing on foreign owners and operators of vehicles. These frameworks must (a) provide effective mechanisms to regulate market entry (b) provide for ongoing regulation of transport operators in the market and (c) support co-ordination and co-operation between South Sudan and neighboring states to act effectively against violations of load limits and other transport laws. This aspect is considered further in the section “Road Transport and Traffic” below.

### *Future Developments and Evolution*

South Sudan’s *Investment Promotion Act, 2009* (IPA) identified investment in “roads and bridges” as a “priority area.”<sup>23</sup> This refers to investment areas in which the Investment Authority is required to make particular efforts to encourage investment by both national and foreign investors. The premise is that such investment will be *private* as opposed to investment by government. As yet, there is no example of private investment in roads in South Sudan (or broader transport infrastructure sector), but recent interviews with the Ministry of Commerce, Industry and Investment have confirmed the government’s intention of seeking greater private in road construction and maintenance, including the provision and operation of weighbridges.<sup>24</sup>

Approved investors are issued an investment certificate that entitles them to various incentives. These may include tax exemptions granted by the Authority, capital allowances (e.g., on plant and machinery), annual deductible allowances, and depreciation allowances. The Act also provides a number of investment guarantees, including a guarantee against expropriation; right to employ expatriate managers; right to choose method of dispute resolution, including access to foreign arbitration; and the right to repatriate capital, dividends, and profit.

### *Findings*

- The Nimule-Juba road is a declared international road for which responsibility is assigned to the SSRA.

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<sup>23</sup> Other transport infrastructure regarded as an investment priority includes: “river ports, seaports (sic), airports and railways.”

<sup>24</sup> On November 8, 2011.

- The SSRA Act provides a framework supporting private investment in road and bridge infrastructure. This is bolstered by the investment incentives and guarantees provided in the IPA.
- Under the SSRA Act, the Authority enjoys a range of options to ensure the future operation and maintenance of the road, including
  - Undertaking operation and maintenance *in house*;
  - Contracting out periodic and routine maintenance;
  - Imposing tolls to fund maintenance costs;
  - Letting a management contract to appoint a private firm to operate and maintain the road and collect tolls or adopting other forms of PPP to upgrade the road in future.<sup>25</sup>
- South Sudan has limited experience with public-private partnerships (PPPs) and no direct experience with private road operation. Moreover, the SSRA is still being established and institutional capacity to initiate and manage complex PPP arrangements is likely to be limited or non-existent initially.
- The regulatory framework for vehicle overloading control is rudimentary and must be refined. An alignment with regional (EAC) standards is missing. Investment in equipment, the development of control strategies and procedures, and training of staff are also required. This must be bolstered by an appropriate framework to regulate the activities of foreign trucking firms in South Sudan, including suitable measures to hold firms accountable for road damage and other offences.

## ROAD TRANSPORT AND TRAFFIC

### *Legal, Regulatory, and Institutional Overview*

Road transport and traffic is regulated under the *Traffic Act, 2003*, which is expected to be repealed once the *Road Traffic and Safety Bill* is passed. Accordingly, our analysis of the 2003 Act pertains only to procedures and practices established under it that are likely to be perpetuated under the new law.

As noted earlier, the Transitional Constitution does not clearly define the jurisdiction of different levels of government over road transport and traffic. There is anecdotal evidence that this has given rise to turf wars between national agencies and between national and state governments. One area of dispute that has held up consensus between government agencies on the content of the new Act relates to vehicle registration and licensing.<sup>26</sup> The most recent text includes a compromise whereby the South Sudan Police (SSP) will register and license “private vehicles” (including commercial trucks and passenger vehicles) while the Ministry of Transport (MoT) will register and license government, NGO, and diplomatic vehicles. This compromise, however, appears to contradict the Transitional Constitution, which clearly states that vehicle registration, driver licensing, and issuance of number

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<sup>25</sup> This option presupposes that there is enough traffic on the road to generate a revenue stream that covers the cost of operation, maintenance, and toll collection. If the revenue stream is too weak, alternative funding options would need to be considered.

<sup>26</sup> An underlying factor in the dispute is the revenue-generating nature of the function.

plates is a state responsibility. As shown in Figure 4-3, state police have, until now, handled vehicle registration and licensing.

Figure 4-3  
*Vehicle License and Road Licenses*



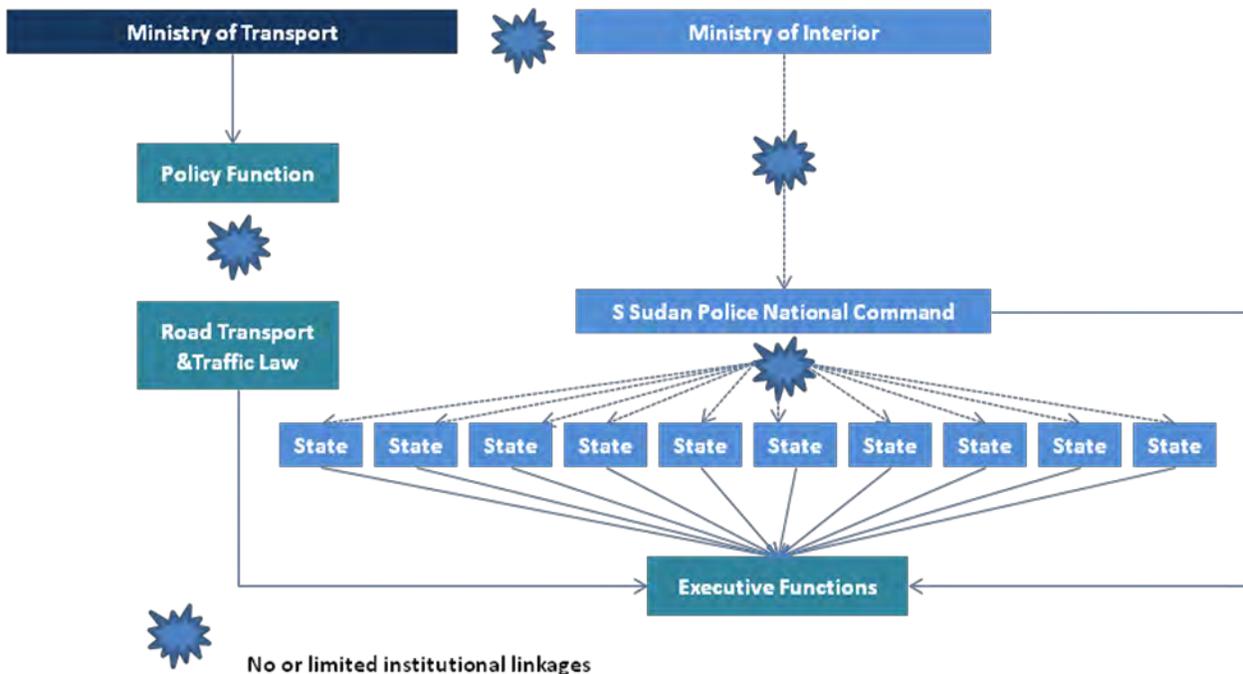
While the text of the *Road Safety and Traffic Bill* was finalized in 2011, progress toward final adoption by the National Legislature has been slow. The Bill is being vetted by the Ministry of Justice and has yet to be submitted to the Council of Ministers for approval before it can be tabled for consideration by the legislature. The protracted delay suggests differences of opinion between key ministries on aspects of the Bill.

South Sudan's constitutional arrangements for road transport and traffic pose challenges for effective regulation of the subsector. As shown in Figure 4-4, policy and executive responsibility is split between the MoT and the Ministry of Interior, which oversees the traffic police. This encourages a "silo approach" whereby each ministry works in isolation from the other. In most areas institutional linkages are limited or nonexistent. For example, the MoT is responsible for developing and implementing road transport and traffic policy, but has limited executive responsibility (and limited capacity to assume such responsibility). It must rely on the Ministry of the Interior to carry out its policy, but there are no arrangements between the two ministries to coordinate this function.

Moreover, institutional arrangements under the Ministry of the Interior hinder efficient policy implementation. In reality, the main regulatory functions (vehicle inspection and licensing, driver testing and training) and on-the-road enforcement are not performed by the Ministry of Interior, but by the police acting semi-autonomously. This places policy implementation at a further remove the MoT. Police efficiency is also compromised. Most regulatory activity is undertaken by state police forces, which largely act independently of each other and without significant national oversight. The lack of coordination between the two ministries (and structures to support this) and the inability of the MoT to control the implementation of its policy neutralizes the MoT's ability as custodian of the policy to ensure that it is implemented.

The challenges posed by the current institutional setup are appreciated. For this reason, the MoT recently launched the Transport Sector Development Program to review ministry functions and to adopt a restructured institutional framework that better supports those functions. The Ministry will also be reviewing how it needs to position itself vis-à-vis other ministries with responsibility for related sectors: Ministry of Roads and Bridges, Ministry of Interior (responsible for the South Sudan Police), Ministry of Finance and Economic Planning (related to satellite revenue collection) and the Ministry of Housing and Physical Planning.

Figure 4-4  
*Institutional Framework for Road Transport & Traffic*



SOURCE: Nathan Associates

Unlike its neighbors to the South, South Sudan requires vehicles to drive on the right (an arrangement inherited from the former united Sudan). This requirement will be perpetuated under the new *Road Traffic and Safety Bill* (Sec 59). The use of vehicles from countries that drive on the left on South Sudanese roads—especially heavy goods vehicles—presents a safety hazard. The main issue is that drivers of such vehicles have a larger “blind spot” when driving on the right. Aligning South Sudan with its Southern neighbors by introducing driving on the left does not offer an immediate solution, as this would merely reverse the problem for South Sudanese vehicles currently fitted with steering devices on the left. Moreover, most of South Sudan’s neighbors, notably Ethiopia and the DRC, also drive on the right and vehicles from these states also ply its roads. Several countries worldwide face a similar challenge, e.g. between the U.K. and Europe; China and Hong Kong; Namibia and Angola, DRC and Zambia, Kenya and Ethiopia, etc. Solutions that have been mooted in advanced economies include requiring vehicles to be fitted with enhanced rear view mirrors that reduce blind spots; sensitization of foreign drivers through information campaigns, route restrictions for foreign vehicles and in-vehicle cameras providing all round vision. Given existing institutional capacity within South

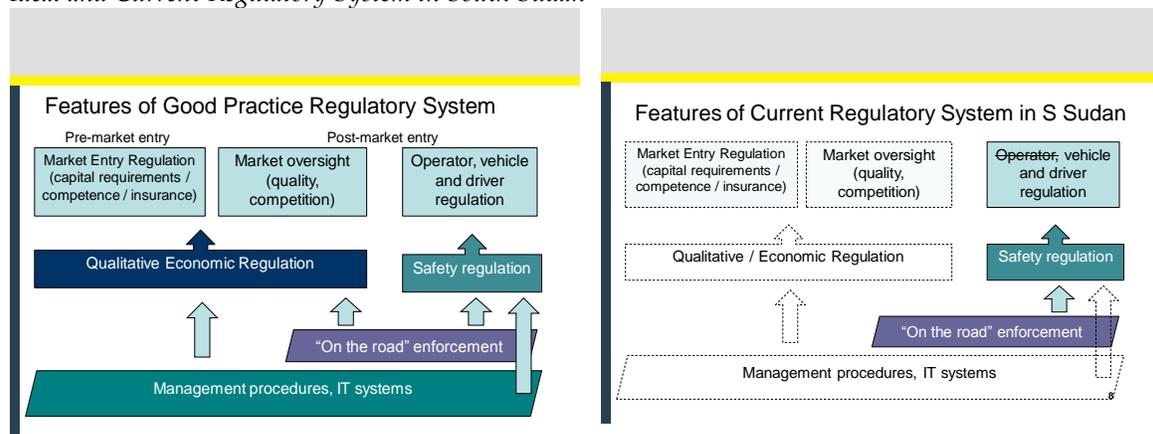
Sudan, none of these solutions appear suitable as they likely to be beyond the current ability of the authorities to introduce or implement.

In common with other states in East Africa, the regulation of road transport in South Sudan is focused more on revenue collection than the promotion of high standards of safety and service quality. The region is still some way from implementing good practice road transport regulation found in most developed countries. As shown in Figure 4-5, such regulation aims to improve service quality, ensure effective competition, lower transport costs and improve road safety through a comprehensive range of measures in both the pre-market entry and post-market entry phases.

In countries that apply good practice models, prospective operators need to meet pre-market entry requirements that typically include minimum capital reserves, proof of competence as road transporter (or proof of successful completion of approved training courses) and proof of liability insurance. Market participants are also monitored to ensure service quality and to combat anti-competitive practices such as price fixing. These elements are absent in South Sudan (as in all of the EAC states).

An important gap in South Sudan's rules governing the sector is the lack of owner or operator liability. Good practice recognizes that the owner (or operator of a leased vehicle) has the primary responsibility for ensuring its roadworthiness and managing the actions of the driver (who is usually merely an employee). For this reason, liability for offences such as overloading (but also safety failures associated with the vehicle) attaches to the owner /operator in the first instance. The driver may also be held liable, but usually only if the violation is directly attributable to the driver. Using appropriate information management IT systems, regulators can also improve record-keeping of offences, identify common offences and devise enforcement strategies to combat them, develop profiles of repeat offenders and introduce targeted measures to improve the efficiency of enforcement. In South Sudan, rules, management systems and procedures are not yet in place to achieve this.

Figure 4-5  
*Ideal and Current Regulatory System in South Sudan*



SOURCE: Nathan Associates

As discussed above with reference to the problem of road damage caused by heavy goods vehicles, a large portion of the commercial traffic on South Sudan's roads comprises foreign vehicles. These vehicles (and their owners and drivers) are theoretically subject to Sudanese laws. However, there is no agreed framework to regulate this traffic between South Sudan and its neighbors.

Under the influence of COMESA and subsequently EAC rules, the regional trend is that each country retains primary responsibility for regulating market entry for vehicles registered within its territory. In practice, this responsibility manifests through the authority granted to each state to authorize its vehicle operators to undertake international journeys without the need for concurrent authorization from the state of destination or transit.<sup>27</sup> This approach, which is widely accepted in Eastern and Southern Africa, implies that the state of destination or transit relies on the state of origin of vehicle to ensure the vehicle's roadworthiness and the competence of the driver. It also requires the states of origin to act against the owner/operator in the event that a violation is committed whether in the state of origin or in a foreign state.

South Sudan is not yet a member of any REC and the absence of any bilateral agreements with its neighbors implies that there is not mechanism whereby South Sudan can report violations by foreign truckers to their responsible authorities for suitable action to be taken against offenders.<sup>28</sup> Once South Sudan joins the EAC, it will automatically accede to the Tripartite Agreement on Road Transport. Under the Agreement, South Sudan will be able to request authorities in other EAC States whose transporters commit offences to take a range of sanctions against such offenders,<sup>29</sup> thereby enhancing the enforcement of road traffic and transport rules on South Sudanese roads.

The institutional fragmentation between South Sudan's transport authorities also directly affects the regulation of international transport on the Nimule-Juba road. At present, foreign trucks entering South Sudan at Nimule are subject to a range of charges imposed by various national and state agencies independently of each other. It is not clear by virtue of which law or regulation charges are imposed. Even when monies paid are receipted, the basis for the charge is difficult to determine. The description of some charges suggests that they are intended as cost recovery for road use or for economic or technical regulation; however, the receipts in Exhibit 4-1 support the conclusion that the charges are mostly revenue generators. For example, road toll charges (Item 1) are collected by the Directorate of Taxation of the Ministry of Finance and Economic Planning. Because there is no Road Fund, this charge is effectively a tax and the income it generates forms part of general government revenue. Charges for a temporary road license (Item 2) are collected by the national police; and for a state traffic permit (Item 4) by the CES police. While the *Traffic Act 2003* requires all vehicles to be licensed (Sec 16(1)), there are no provisions mandating the issuance of temporary licenses to foreign-

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<sup>27</sup> This is the so-called "single permit system" on which the COMESA carrier license as well as the EAC's Tripartite Agreement on Road Transport is based.

<sup>28</sup> Of course, South Sudan retains the right as a sovereign nation to enforce its own laws against foreign trucks. However, this option is often unattractive and ineffective given the problems associated with enforcement of rules against foreign vehicles and drivers.

<sup>29</sup> These sanctions range from issuing a warning to temporarily or permanently suspending the operator's license to undertake international transport.

registered vehicles.<sup>30</sup> Similarly, there is no clear legal basis in the Act for the state police to issue a “traffic permit.” Under the *Traffic Act*, a license is only issued if proof is provided that it has been inspected and declared roadworthy. There is no verification of the roadworthiness of foreign trucks, reinforcing the conclusion that the issuance of a license or permit is merely a taxation exercise. There is also no reference in the Act to a requirement that foreign vehicles pay a charge for “transit goods” (Item 3).

South Sudan is not a member of COMESA, but the formerly united Sudan was. As a member state, it was bound to implement COMESA’s transit facilitation measures. Those measures include each member state recognizing carrier licenses and third-party insurance (Yellow Card Scheme) issued by and/or in other member states. Members may not require that foreign vehicles obtain more insurance when entering their territory (Item 5). Thus, South Sudan’s requiring temporary road licenses and traffic permits (Items 2 and 4 in Exhibit 4-1) and additional insurance (Item 5) would be violations of obligations under COMESA.

It appears, however, that the formerly united Sudan did not honor its obligations, which may explain at least to some extent why South Sudan has continued these practices since gaining independence. Should South Sudan accede to COMESA, it will be required to meet obligations regarding carrier licenses and insurance. However, as noted, the new traffic law contains no reference to future cooperation or alignment with RECs. Unless national law—in this case, the *Road Traffic and Safety Bill, 2011*—expressly imposes a duty to abolish practices that conflict with REC obligations, these discriminatory practices will most likely persist.<sup>31</sup>

As noted earlier, road transport operations on the Nimule-Juba corridor have been dominated by foreign trucking firms (mostly from Kenya, Uganda, and DR Congo). South Sudanese truckers have been active in the national market. The trucking industry has not yet attempted to organize itself into representative groupings as is typical in many other road corridors, nor has it yet tried to engage authorities in a concerted and sustained way to begin removing impediments to transport efficiency on the route.<sup>32</sup> This lack of engagement may be due in part to market fragmentation. Under normal conditions, South Sudanese truckers would have wielded the most influence with their own government on these matters. But the trucking industry does not appear to be well organized in representative associations and South Sudanese firms have a low profile in the international market. In turn, “foreign” truckers from Kenya, Uganda, and elsewhere are not likely to have much influence with South Sudanese authorities.

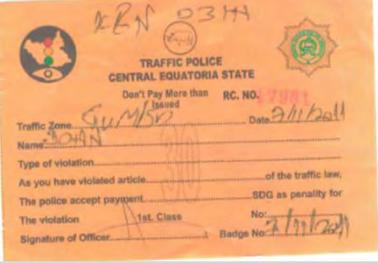
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<sup>30</sup> It has not been possible to verify whether temporary licenses are possibly mandated by regulations issued under the Act.

<sup>31</sup> This conclusion is reinforced by the experience of other COMESA member states who fail to comply with their regional obligations, despite being under a longstanding obligation under the various COMESA instruments to do so.

<sup>32</sup> Instead, there is evidence of competition between foreign and local truckers, all trying to capture a share of the business; witness attempts by the South Sudanese Drivers’ Association to force foreign truckers to use their drivers when they cross the border.

Exhibit 4-1  
Foreign Truck-related Charges at Nimule

<p><b>1</b></p> <p>Nature of Charge: Stamp duty (or road toll charges)</p> <p>Agency: Ministry of Finance and Economic Planning/Directorate of Taxation</p> <p>Amount: 150 SSP</p>	
<p><b>2</b></p> <p>Nature of Charge: Temporary road license</p> <p>Agency: Traffic/South Sudan Police</p> <p>Amount: 100 SSP</p>	
<p><b>3</b></p> <p>Nature of Charge: Transit goods</p> <p>Agency: South Sudan Customs</p> <p>Amount: 40 SSP</p>	
<p><b>4</b></p> <p>Nature of Charge: State Traffic Permit</p> <p>Agency: Central Equatoria State Traffic Police</p> <p>Amount: 30 SSP</p>	
<p><b>5</b></p> <p>Nature of Charge: Third party insurance</p> <p>Agency: Insurance Company (various)</p> <p>Amount : 70 SSP</p>	

Nevertheless, it is clear that those authorities are increasingly aware that physical and other barriers on the route are detrimental economically and socially.<sup>33</sup> The directive by the national government on the dismantling of road barriers issued in September 2011 is evidence of this realization, even although the directive seems to have had little effect.<sup>34</sup> This can probably be ascribed to the current institutional arrangements described above, which make it very difficult for the national government to speak with one voice. The problem is compounded by the limited authority that the national government has over state agencies.

### *Findings*

- The proposed *Road Traffic and Safety Bill*, like its predecessor, has no provisions relating to international road transport. Hence, there is no policy guidance on how such transport will be facilitated or regulated (if at all). Nor does the Bill seek to align South Sudan's policy and legislation with regional standards and rules. There are also no provisions to introduce the transport facilitation instruments adopted by the RECs, such as the COMESA carrier license or the EAC Tripartite Agreement on Road Transport. These gaps must be remedied through suitable refinements to the *Road Traffic and Safety Bill* which should preferably a separate chapter on international road transport.
- South Sudan's transport policy of 2007 proposes the creation of a regulatory framework for commercial transport (freight and passengers) aimed at raising standards of service quality and safety. Among others, the need to professionalize the industry through training is highlighted. Given the experience of other countries regarded as trendsetters in this respect, such a framework could eventually consist of a system of operator licensing based on professional qualifications, financial standing, and compliance with safety standards. It would also introduce the concept of owner / operator liability and enable authorities to hold firms or vehicle managers to account for violations such as safety failure, overloading and damage to road infrastructure. Current law is silent on the issue and there are no provisions to introduce such a system in the proposed *Road Traffic and Safety Bill, 2011* which should be refined to reflect the objectives of the 2007 policy document.
- Current institutional arrangements severely weaken the ability of government to pursue a coherent road transport and traffic policy. The MoT has limited ability to oversee policy implementation and remains dependent on the police for actual performance. Moreover, there is evidence that the police are intent on retaining control of the subsector and will resist any attempt by the MoT to exercise oversight. These challenges are exacerbated by the fact that most regulatory activity is done by the state police without coordination or national-level oversight.
- The legal basis for the truck-related charges imposed on vehicles entering South Sudan at Nimule is difficult to verify. There are no provisions in the *Traffic Act, 2003* mandating the charges being imposed. Nor will the proposed *Road Traffic and Safety Bill* in its present guise

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<sup>33</sup> For example, some governors have pointed fingers at taxation by southern states as one cause of the high prices of imported food. See *The Citizen*, "Governors accuse Central and Eastern Equatoria of High Prices", 18 November 2011.

<sup>34</sup> Based on interviews with foreign logistics firms in Juba.

provide authority. Prior to independence, South Sudan was obliged to comply with COMESA rules that require mutual recognition of trucking licenses and third party insurance policies issued in other member states. But it appears that the former united Sudan did not honor its commitments and this practice has now been perpetuated since independence.

## **RAILWAYS**

There are no functioning railways in South Sudan and no new railways legislation has been passed. This implies that the Sudanese Railway Act of 1973 is still the prevailing legislation, a copy of which was not available to the study team. We were therefore unable to assess the appropriateness of the Act for regulation of the railways in South Sudan.

## **RIVER TRANSPORT**

No legislation regulating river transport in South Sudan has been identified.

## **Customs and Taxation: Legal and Regulatory Framework Analysis**

As noted, national and state governments in South Sudan have taxation powers. On the Nimule – Juba corridor, the national government is responsible for the collection of customs and excise duties on imports (and may sometimes impose export duties), while other national agencies (Ministry of Commerce and the National Standards Board) also impose charges akin to taxation. For their part, state governments have wide latitude under the Transitional Constitution to impose “state taxes.” Using these powers, state revenue authorities collect a range of taxes on goods transported along the corridor.

## **LEGAL AND REGULATORY REVIEW**

At a national level, the legal framework for customs is in a state of flux. The prevailing law is the customs laws of the former united Sudan (*Customs Act, 1986*). Prior to independence, the Government of South Sudan also legislated in this area, adopting, among others, the *Customs and Excise Duties (Provisional Order) 2000*. The net result is that there are, at present, no clear policy guidelines or procedures governing customs tariffs in South Sudan. This confusion has resulted in different tariffs being applied at different localities. For example, goods cleared in Juba attract tariffs as set under the *Customs Act 1986*, while in Nimule the more recent so-called “GOSS” tariff is being applied.<sup>35</sup> Similarly, as shown in Exhibit 4-2, confusion also results in the wrongful levying of excise taxes on imported goods.<sup>36</sup> An interministerial fiscal relations task force has been appointed to formulate proposals on a new fiscal regime for South Sudan, including the customs tariff. A new customs law is also going to be prepared; meanwhile the legislation tends to be updated in line with the old Sudan law with suitable adjustments to meet South Sudanese requirements. For example, South Sudan

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<sup>35</sup> The study team has been unable to verify the difference between the two tariffs.

<sup>36</sup> Excise duties – per definition – are taxes imposed on domestically manufactured goods, not foreign goods imported into the national territory.

intends to adopt the 2010 amendment to the *Customs Act, 1986* passed by Sudan. The reasoning is that it will align the South Sudanese law with WTO requirements for customs valuations and the protection of intellectual property.

South Sudan is also aware of the need to progressively align its tariffs and tariff classification with the region. It is planned that a new customs tariff will be adopted within six months. The new tariff will reduce duties to a range midway between the current Sudanese tariff and the EAC tariff. It is also intended to adopt the Harmonized Commodity Description and Coding System, which will also be in line with COMESA practice.

Various other national agencies also impose goods-related charges. As shown in Exhibit 4-3, these include the Ministry of Commerce, Industry and Investment and the National Standards Board. The legal basis for these charges is unclear. It is noteworthy that both are paid on an *ad valorem* scale (i.e. the amount fluctuates according to the amount and value of goods).<sup>37</sup>

Aside from national agencies, individual state governments impose “development taxes” on goods as entering a state (see Exhibit 4-4). A Schedule to the CESRA Act contains details on the rate of tax on individual items. This rate is either a percent of the item’s value or a rate per unit (e.g., SSPP 6 per bag of cement). Schedules change from year to year. It is assumed that similar legislation prevails in EES.

## **INSTITUTIONAL FRAMEWORK**

Institutionally, the administration of customs at the national level in South Sudan is also in flux. Formerly, the customs department was under the Ministry of Interior and operated as a uniformed, armed force. It has been decided that the Ministry of Finance will exercise line function responsibilities over customs. This is a precursor to the establishment of a national revenue authority that will assume responsibility for all fiscal functions of the national government, something planned to occur over a five-year period. In the interim, the Ministry of Finance will have technical responsibilities to determine and collect tariffs, assess goods and tariffs (customs duties and taxes), inspect goods, and pay Ministry of Interior customs staff. The Ministry of Interior will continue with border policing and assume administrative responsibility for its equipment and staff attached to Ministry of Finance (recruitment, training, promotion, issuing of guns to staff that police the border and inspect goods).

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<sup>37</sup> Although South Sudan is not a member of the World Trade Organization, Sudan applied to join as long ago as 1994. States applying for WTO membership are routinely requested to phase out and abolish *ad valorem* charges on imports.

Exhibit 4-2

Good-related Charges Imposed by Ministry of Finance at Nimule Border Post

Customs Duties imposed by Ministry of Finance

جمهورية السودان  
 وزارة المالية والاقتصاد الوطني  
 الوحدات الجماعية  
 اتصالات تكملة

نموذج مالي ايرادات  
 Fin Form (Rev.) No. 15  
 Receipt No. FK  
 6083726

Locality: Nimule محلية Min./Prov. Qadisiya وزارة/محافظة  
 Received from: Bababing وصل من

ON A/C OF حساب	Particulars ان	بـ	L.S جنيه	P.T قرش
	3221 047	0.00	214	
	362 037	0.00	638	
	608 017	0.00	10	
			10	
Total In Words	Nine hundred and thirty seven		937	10

Date: 01/11/2007 التاريخ  
 Name of Collector: M. M. M. M. اسم المتحصل  
 Signature of Collector: [Signature] امضاء المتحصل

الجملة كتابية  
 SCPP-FF-18-2000

*Customs duties (GOSS)*

Excise duties wrongfully imposed by Ministry of Finance officials at Nimule

جمهورية السودان  
 وزارة المالية والاقتصاد الوطني  
 الوحدات الجماعية  
 اتصالات تكملة

نموذج مالي ايرادات  
 Fin Form (Rev.) No. 15  
 Receipt No. FK  
 5983726

Locality: Nimule محلية Min./Prov. Taxation وزارة/محافظة  
 Received from: [Blank] وصل من

ON A/C OF حساب	Particulars ان	بـ	L.S جنيه	P.T قرش
	Payment of 200	0.00	200	
	excise duties	0.00		
Total In Words	Two hundred		200	

Date: 01/11/2007 التاريخ  
 Name of Collector: M. M. M. M. اسم المتحصل  
 Signature of Collector: [Signature] امضاء المتحصل

الجملة كتابية  
 SCPP-FF-18-2000

*Payment of Excise duties (Taxation, Ministry of Finance-GOSS)*





It appears that some states have advanced further than the national government with institutional reforms.<sup>38</sup> Central Equatoria State (CES) established a State Revenue Authority in 2007. Under the Central Equatoria State Revenue Authority (CESRA) Act 2007, CESRA collects direct and indirect taxes. Direct taxes include personal income tax, business profit tax, rental income tax, capital gains tax, stamp duties and the “development tax” on goods referred to above. Indirect taxes consist of the state property tax; licensing fees for imports, exports, companies, wholesale and retail activity, pharmacies, drug stores, clinics, advocates and consultant; and fees for tax ID cards and agency tax IDs. Revenues collected by CESRA represent 32 percent of the all revenue allocated to the state, the balance being made up by national subventions.

## FINDINGS

- The administration of customs under the national government is in flux. New customs policy and legislation is being developed and the customs function is being transferred from the Ministry of the Interior to the Ministry of Finance. In the long term, fundamental institutional reforms are planned to establish a national revenue authority that will, among others things, deal with customs matters. At present, the authorities are struggling to absorb and manage many changes. Under these conditions, it is difficult to lobby for simpler application of customs rules as policymakers and line function officials are occupied in managing transitional processes.
- The fluid policy environment is illustrated by the incorrect imposition of excise duties on foreign imported goods and the existence of two sets of customs tariffs (the “old” Sudanese tariff and the GOSS tariff). These discrepancies are unlikely to be resolved before the adoption of a new customs law and tariff (planned to occur in the next six months but may well take longer).
- The various goods-related taxes and charges appear to be a result of each agency seeking to maximize revenue with no regard for economic impact. There is no harmonized framework to ensure that the national and state governments pursue complementary fiscal policies that advance overall economic development. The major challenge is for national government and states to collaborate in rationalizing taxes and charges to reduce the negative impact on transport and commodity prices.

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<sup>38</sup> Due to the scope of the consultancy, the study team was only able to verify the situation in Central Equatoria State.

# 5. Trade and Traffic Forecasts

## Economic and Sectoral Overview

South Sudan gained its independence in July 2011 after 21 years of civil war. Its first challenge is to establish the security and stability necessary for rapid economic development. The country has expansive reserves of oil wealth that could advance its development if managed well. Meanwhile, the industry and manufacturing sectors are not well developed and most households sustain themselves through farming or animal husbandry. Accordingly, along with rehabilitation of transport infrastructure, agriculture sector development has been a priority of the government since independence.

### AGRICULTURE

With an expansive natural resource base, agriculture has historically been very important in South Sudan. About 4.5 percent of arable land is devoted to crops (sorghum, maize, fruit, vegetables, coffee, and tea) and livestock production, and 85 percent of households farm and 65 percent own cattle.<sup>39</sup> In some areas, large scale mechanized crop farming is used for sorghum, sunflower, and sesame. Food crops (e.g., basic grains, flour, sugar, vegetables, fruit, and some fish) are imported primarily from Uganda and Kenya.

South Sudan is a net importer of agricultural products but has great potential for exports once the necessary transport infrastructure is in place. Timber, forest products, fisheries, cereals, livestock hides and skins all hold export potential. At present, prices received for cattle are discounted because the animals are diseased or in poor condition. Exports of meat, hide, skins, and other animal products will increase once animals' health improves. Gum arabic, a forestry product mostly from the Upper Nile State, has been exported abroad before. Sector development is constrained by lack of technology and human capital and ambiguous land policy. Most of the land in South Sudan is held by communities by means of traditional rights, the practices of which are not consistent and not always predictable.

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<sup>39</sup> Murithi, Antony. Draft: Development Plan Macro Chapter. February 2011.

## **OIL**

Oil-related money flows make up nearly 98 percent of government revenue, and oil could certainly contribute to the rapid development of South Sudan so long as there is rule of law, functioning institutions, and an environment conducive to private sector development. Unless new reserves are discovered, however, oil production is expected to decline and unsettled questions regarding the oil revenue-sharing agreement with Sudan make it difficult to estimate expected returns from oil exports. Currently, South Sudan can export oil only via the pipeline going through Sudan and exiting Port Sudan. In January 2012, it stopped oil production because of disputes about pipeline use and started planning a pipeline through Kenya, which would be operational in five years of the decision to implement. In August 2012, after protracted negotiations, Sudan and South Sudan reached an agreement that reduces the cost of oil transport over the Port Sudan pipeline to US\$ 9 from US\$36 per barrel. South Sudan does not have an oil refinery, but does have a plan to build one.

## **MANUFACTURING**

Small in size and scope, South Sudan's manufacturing sector is concentrated in urban areas. Construction materials and household durable products are manufactured in response to local demand. Before independence, most raw materials and intermediate goods came from Khartoum, but importing from there is no longer an option and inputs are less accessible. Other constraints on the sector include lack of access to loans, high transport costs, and unfavorable regulations.

## **TRANSPORT**

South Sudan's poor transport links impede rapid development of trade. Feeder roads between rural and urban areas are in poor condition and there are very few adequate storage facilities—two factors in the high costs of inputs. The border with Sudan is closed so no goods flow to the north. Road links to industrial centers in the west are in poor condition as are road links to Uganda and Kenya. There is no road to Ethiopia. The Nile River is also a transportation link, but it is badly maintained and inefficient, with consequent high transport costs. The limited rail infrastructure in South Sudan which is connected only to the north was severely damaged during the civil war.

## **PRIVATE SECTOR**

Two decades of war prevented the emergence of an entrepreneurial class. In spite of abundant oil resources, for example, there is little private sector activity in the oil sector. Instead, the private sector is concentrated around large foreign aid programs related to transport, provision of basic services to urban populations, and building government capacity. Lack of skilled labor, especially skilled local labor, is a problem. The instability of war prevented residents of South Sudan from pursuing education. Wages for skilled labor are very high, and this attracts immigrants from other countries who send their wages back home to families, preventing consumption spending that feeds back into South Sudan's economy.

## Methodology for Trade Forecasts

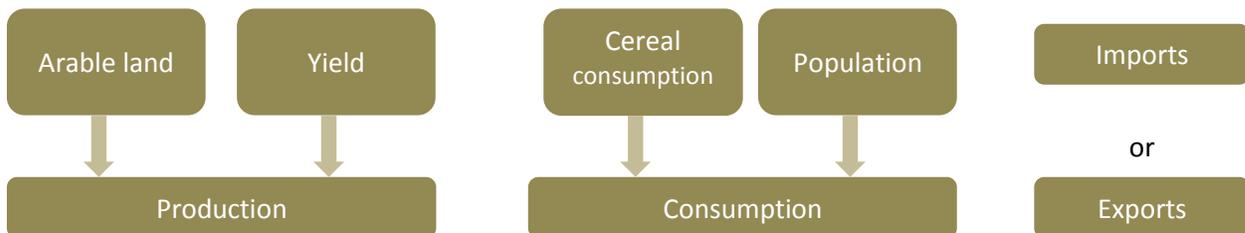
### AGRICULTURAL TRADE

For agricultural forecasts, we use a production-deficit model, wherein the difference between production and consumption determines whether South Sudan will import or export in the sector. Consequently, the output of the model is one value, either imports or exports. We estimate the remaining value on the basis of historical growth rates from comparable countries at different levels of development.

Agricultural production in South Sudan is concentrated in cereals, gum arabic, tea, coffee, sugar cane, livestock and animal production, and forestry. We use cereal production as a proxy for agricultural trade because (1) it represents the biggest volume of agricultural production and (2) data on cereals is the most complete. The difference between production and consumption does not mean there will be strictly imports or strictly exports. Demand for one cereal crop (e.g., sorghum) can exceed production, while demand for another (e.g., rice) can be less than what is produced. Therefore, crops will be imported even if in sum we see a surplus in cereal production, and crops will be exported even if in sum when we see a deficit.

The two components of a production-deficit model are production and consumption. Production factors in the model are *yield* and *arable land*, and consumption factors are *cereal consumption per capita* and *population* (see Figure 5-1). We obtained values for current yields and cultivated land from the *Statistical Yearbook* of the Southern Sudan Centre for Census, Statistics, and Evaluation and estimated current production values as a function of the two. Values for current cereal consumption were obtained from the same source.

Figure 5-1  
*Methodology for Estimating Agricultural Production*



### *Production Projections*

It is challenging to project values for South Sudan given the lack of historical reference and ongoing political, institutional, and economic uncertainties. We therefore adapted values from comparable countries (Ethiopia, Uganda) and regional averages (East Africa, Sub-Saharan Africa).

**Yield.** For projected yield, we used 2009 values from Ethiopia (1.23 t/ha) for the 2011-2015 period and 2000 values from Uganda (2.68 t/ha) for the 2015-2030 period (see Table 5-1).<sup>40</sup> We used Ethiopia's yield for the first period because it is a low-income country whose agricultural sector is not very developed, and the country has suffered severe food security issues. Ethiopia is slightly more developed than South Sudan, so it is reasonable to take its 2009 agricultural yield value as a target for the near future of South Sudan. We used Uganda's yield for the second period because it can be posited as a target level of development for the medium term. Over the past decade, Uganda has maintained a healthy growth rate (7.4 percent average) and the political stability necessary for prosperity. Uganda's reformed agricultural sector has done fairly well, and has been supported by international organizations. Given that agriculture has vast potential in South Sudan and is a development priority of the government, we expect South Sudan's yields in 2030 to reach Uganda's yields in 2000. This is a conservative estimate in keeping with South Sudan's political and institutional challenges and the resulting increase in efficiency in agricultural production.

Table 5-1  
*Cereal Yields and Benchmark Countries (tons per hectare)*

Year	South Sudan (historic and projected)	Chad (historic)	Ethiopia (historic)	Sudan (historic)	Uganda (historic)
2000		0.85	0.80	0.83	2.68
2009	0.77	1.84	1.23	0.90	3.34
2015	0.85				
2030	1.84				

**Arable Land.** Only 4.5 percent of South Sudan's land is under cultivation. Assuming agribusiness development, we expect that arable land will grow at an annual average rate of 2 percent in both periods, reaching 7.6 percent in 2030. Having arable land and yield values, we were able to obtain values for future production.

### *Consumption Projections*

We based calculation of consumption values on (1) per capita cereal consumption (kg/cap) and (2) population.

**Per capita cereal consumption.** For the 2011-2015 period, we used the sub-Saharan average consumption value for cereals in 2000 (118.3 kg per capita).<sup>41</sup> For the 2016-2030 period, we used the FAO estimate (published in 2003) for average cereal consumption in sub-Saharan Africa by 2030 (141 kg per capita). South Sudan is expected to reach these consumption levels by 2030. In general, per capita consumption increases with urbanization and rapid urbanization is expected around the major cities (Juba, Wau, Malakal) in the near future.

<sup>40</sup> Yield values are from the FAO database.

<sup>41</sup> South Sudan's current per capita consumption is likely below average because of food insecurity.

**Population.** We take the range of population growth in East Africa, 2.5 percent to 3.7 percent, as a reference. We believe that in the 2011-2015 period, South Sudan will be on the higher end of this range, 3.5 percent, because of returnees. For the 2016-2030 period, we assume that population growth will trend more on the average, 3 percent.

### *Results*

Using the factors of production and consumption specified above, our model produced a deficit in the 2011-2015 period, leading to imports, and a surplus in the 2016-2030 period, leading to exports. We estimated exports for 2011-2015 using Uganda's historical export growth as a reference. This comparison is appropriate because Uganda's historical agricultural growth can correspond to South Sudan's future agricultural growth for reasons mentioned above. For the 2016-2030 period, we used Zambia as a benchmark because Uganda's historical import growth was unrealistically high for South Sudan. This is appropriate also because Zambia is at a more advanced level of development compared to Uganda, so South Sudan can be compared to it in the medium run.

## **ANIMAL PRODUCTS**

We arrived at projections for milk and meat using the target levels of production stated in the government's "South Sudan Development Plan." For milk production in the 2011-2015 period, we extrapolated an annual growth rate of 8 percent, and then applied it to the current milk production to obtain values for 2015. For the 2015-2030 period, we assumed that growth would slow to 6 percent.

For meat production, we followed the same process. The annual growth rate for the first period (2011-2015) was very high, 62 percent, which is plausible because cattle is one of the South Sudan's main natural resources. During the civil war this resource could not be used efficiently, but postwar stability should accelerate production in this subsector. For the 2015-2030 period, subsector growth will trend to a relatively moderate 15 percent.

## **NON-RESOURCE TRADE**

Non-resource trade refers to manufactured goods, textiles, and other value added products as differentiated from primary agriculture, forestry, or minerals and mining output. Our non-resource trade forecast follows the international trade forecast methodology that Nathan Associates developed for the PIDA study<sup>42</sup>. Modeling the relationship between non-resource-based trade volume, GDP, and population for a large number of countries in Africa, the PIDA study obtains projections using a trade model. Building on past trade flow values, GDP, and population growth, the study produced values for some of the variables of the trade model. These variables, such as elasticity of GDP, are applicable to this study. We employed the same model, the transferable variables, and parameters specific to South Sudan to obtain non-resource trade projections.

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<sup>42</sup> Nathan Associates was responsible for the continent wide travel demand forecasts prepared for the PIDA project (Program for Infrastructure Development in Africa) and financed by the Africa Development Bank (2011).

The PIDA model established values for the following variables: elasticity of GDP, elasticity of population, adjustment factors for change in value to volume over the calibration period, and volume reduction factors. Elasticities are obtained through two-stage least squares regression analysis, using country historical adjusted trade values and direction of trade, GDP, population, and growth rates. The adjustment factor corrects for historical underestimation of the effect of GDP on trade volume. The reduction factor is used because as countries get richer they tend to import higher value goods and add more value to exports.

The values for the following variables were specific to South Sudan:

- **GDP Growth Factors.** It is challenging to forecast GDP for South Sudan because GDP growth will largely depend on the oil industry, about which there are plenty of unknowns: the terms of revenue-sharing with Sudan, when the newly proposed pipeline to Lamu will be operational and when a new refinery will be built (in South Sudan, Uganda or Kenya). Another challenge is converting current GDP values into purchasing power parity estimations, as required by the PIDA model. There are no published conversion factors for South Sudan. Therefore, we used a growth factor obtained through estimations of current and future GDP. We estimated GDP growth projections using the projections of the Ministry of Finance and Planning for 2011 and 2012 as reference points, since this was the only available data. For 2011, the growth rate was 6 percent, and for 2012, 7.2 percent. We averaged these, extrapolated future growth rates, and applied these rates to the current GDP value. Growth factors were obtained by change in GDP over time.
- **Population Growth Factors.** We use the same method to estimate population growth as we used for the agricultural consumption projections, taking the range of population growth in East Africa (2.5 percent to 3.7 percent) as a reference. We believe that in the 2011-2015 period, South Sudan will be on the higher end of this range (3.5 percent) because of returnees and recovery. For the 2016-2040 period,<sup>43</sup> we assume that population growth will trend more to the average of 3 percent. Growth factors were obtained by change in population over time.
- **Independent Growth Rate of Imports and Exports.** These values are borrowed from the PIDA model and calibrated to estimate the portion of import/export growth due to factors other than GDP and population. Estimates for Sudan are being used for our projections. Imports residual growth for Sudan was 5.2 percent, while exports residual growth was 0.1 percent for 2011-2015 and 2.9 percent for 2016-2030.

## OIL TRADE

Our methodology for forecasting oil exports from South Sudan has three input factors: oil production, oil prices, and transport costs/labor. Given the lack of published information on how these factors are going to evolve in the near to medium term in South Sudan, we relied on other reports, our interviews in Juba, and published sources to find growth benchmarks.

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<sup>43</sup> The period reported in this study is 2015-2030. Here, the end of the period is 2040 because the values we borrow from the PIDA model are adjusted to 2040. After obtaining the forecasts, we find 2030 values through trend analysis.

### *Oil Production Factor*

The IMF predicts that, based on current proven reserves, oil production will halve from its current peak (2009) by 2020. Using this benchmark, we decreased South Sudan's oil production following a trend between 2009 and 2020 and applied the same trend to the 2020-2030 period.

### *Oil Price Factor*

Our forecast uses world oil prices from the US Energy Information Administration (International Energy Outlook 2011) in 2009 US\$ per barrel.

### *Transport Costs/Labor Factor*

Our estimates for this factor are based on the condition of South Sudan's transport infrastructure and supporting institutions, and the displacement of skilled labor from the oil sector. Political stability will facilitate improvement in all these areas. We considered such expected improvement and identified growth patterns for this factor. These patterns will largely depend on the speed of improvement. To capture variability, we produced forecasts under an optimistic scenario and a pessimistic scenario.

#### **Optimistic Scenario**

The Optimistic Scenario assumes (1) that transport infrastructure and supporting institutions improve, (2) that skilled labor in the oil industry returns or grows quickly, and (3) that oil production remains steady until the pipeline is operational, at which time production increases. In this scenario, the transportation/labor factor will not be very high to begin with and falls relatively quickly. Current estimates for this factor are 0.28 for 2009 and 0.23 for 2010. We believe that this increases at independence to 0.40 because the border with Sudan is closed and South Sudan must pay a \$32 per barrel transport fee to use the pipeline to reach Port Sudan, a fee that vastly exceeds international norms.

We keep the factor at 0.40 until 2017 for various reasons. First, it will take some years before the planned pipeline is operational.<sup>44</sup> Second, the closed border hinders the movement of equipment and spare parts. Third, many skilled laborers move out of oilfields, leaving South Sudan with few workers. Fourth, rebel militias in oil-producing Upper Nile and Unity states might hamper oil output. The effect of these factors combined will take some time to recede, but after 2017 South Sudan is expected to have the new pipeline, which will greatly reduce transportation costs and drop the transportation/labor factor to 0.20 until 2020.

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#### **What the Transport/Labor Factor Number Means**

The transport costs/labor factor is specified as a number between 0 and 1 that reflects the relationship between annual oil production figures and the value of oil that gets exported. The rationale is that the hampering effect of poor transport infrastructure, supporting institutions, and lack of skilled labor will consume some of the value of produced oil.

In other words, transport and labor inefficiencies will lessen the value of oil exports and possibly the volume as well. When the factor number is high, it means the subfactors are still in bad shape and oil production and exports are costly.

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<sup>44</sup> It may take up to three years to build the pipeline and another two years for the pipeline to be fully operations. See "Both Sudans Risk Heavy Price for Oil Shutdown," *Financial Times* (02/03/12).

After 2020, the factor number drops to 0.10, reflecting greater political and institutional stability, smoother access to equipment, and more skilled labor. Since this is a relatively fast improvement, we consider this as an optimistic scenario. Another factor that feeds into the scenario is increased production. We assume that production will remain steady until the pipeline is operational. Given that the pipeline will decrease transport costs, demand for oil will increase, which will lead to an increase in production. We set this increase to be 3 percent after the year 2017.

### **Pessimistic Scenario**

The Pessimistic Scenario assumes that transport infrastructure, supporting institutions, and the availability of skilled labor improve slowly and that the effect of inefficiencies is larger. Production is set to decline by a third until the pipeline is operational and is then expected to grow by 3 percent, in accordance with the same rationale presented in the Optimistic Scenario.

As mentioned before, we set the factor number for 2011 at 0.40. In this pessimistic scenario, the inefficiencies and effects of poor infrastructure increase in 2012. South Sudan is a new nation so political stability might not be achieved very soon, and such stability is essential to all improvements—in infrastructure, institutional structures, and the business environment. In February 2012, South Sudan stopped oil production and will no longer be using the pipeline through Sudan because Sudan has diverted more than \$850 millions' worth of oil. There is no substitute for the pipeline, as roads and railways are not in good enough condition to transport oil with equivalent efficiency. This will increase transport costs and diminish demand.

In addition to the problems with transport infrastructure are plenty of institutional ambiguities, such as agreements on revenue sharing with Sudan and lack of settled agreements with oil companies. For all these reasons 2012 might be best thought of as a year of “settling” for South Sudan, during which it will have to endure a certain degree of instability. This translates into a high transport/labor factor number of 0.60.

After 2012, we expect improvements in all areas, although slow. For the three following years until 2015, we set the rate at 0.50. As explained above, we expect the pipeline to Lamu to be operational by 2017. After this year, it is likely that alternative infrastructure, roads and railways will be rehabilitated; it will likely be easier to ship equipment; and skilled labor will return to the oil sector. We therefore set the factor number at 0.40 for the years 2018 to 2020, with a gradual decrease over time until 2030.

In this scenario the last number for this factor is 0.20 because any one of the subfactors could still be causing problems by the end the forecast period. The progression of the transport factor assumes that improvements will take longer to be achieved.

### *Annual Export Values and Fuel Imports*

South Sudan currently has 1.7 billion barrels of oil reserves. Export values exceed this amount in the Optimistic Scenario but not the Pessimistic Scenario. The Optimistic Scenario reflects the idea that more oil sources will be discovered in South Sudan.

To obtain annual values for oil exports, we incorporate the three factors (oil production, oil prices, and transport/labor) into our calculation. We then convert the values into volume (barrels).

South Sudan does not have an oil refinery and must import fuel so we also estimate projections for fuel imports. South Sudan is expected to import fuel until an oil refinery is built and operational. Domestic fuel consumption is low enough that the output of the refinery would be sufficient to meet demand. There is no set date as to when the refinery will be operational but we assumed 2017, the same as the date for the pipeline to be operational. South Sudan is not expected to import significant amounts of fuel after that so our forecasts go only to 2017. The forecasts assume that South Sudan cannot use any of the crude oil that it produces and needs to obtain all processed oil from abroad.

There are no published data available on South Sudan's current rate of fuel consumption. We therefore used Uganda's level of consumption as a benchmark, adjusting for differences in GDP and population, and projecting the resultant value into 2017 on the basis of population growth and average growth in industrial development. As population increases, so will demand for fuel; and as industry grows so will demand for fuel. Population growth is assumed to be 3 percent per year, which is average for East Africa. The level of industrial development is proxied by manufacturing sector growth. We used an average growth rate of 4 percent for this, which is Uganda's average annual historical growth rate of its manufacturing industry. In total, until 2017, South Sudan is expected to import only around 30,000 barrels per day of fuel.

## **Trade Forecast Results**

In this section, we present the results of our agricultural, nonrecourse, and oil forecasts. Given the political and economic ambiguities affecting each sector, we assume conservative levels of growth for them as well as for the inputs used to calculate the projections.

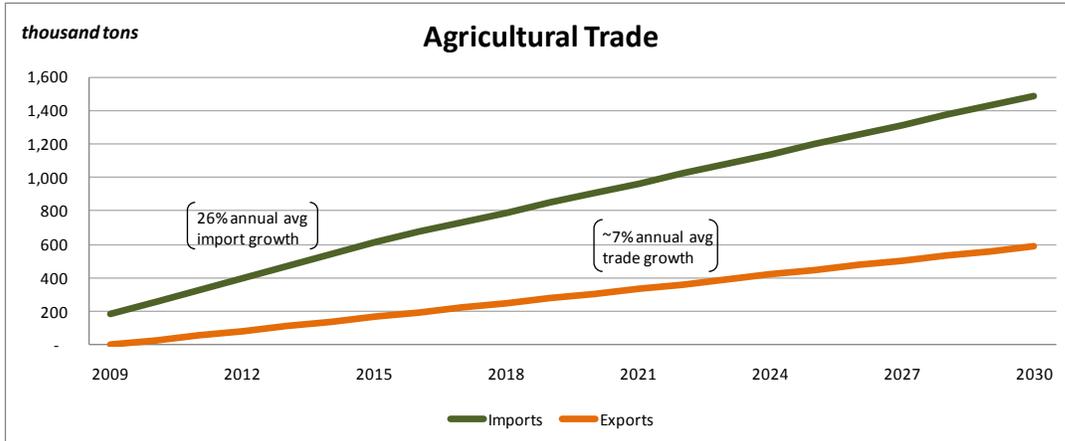
Growth rates are largest in the non-resource sector. This sector consists mainly of manufacturing, which will enjoy 9.6 percent growth in imports and 6.8 percent growth in exports in the 2015-2040 period. The agricultural sector follows, with an average of 7 percent trade growth in the same period. The least growth is expected in oil exports, between 1 and 4 percent. The difference in growth rates can be explained as follows. Oil production is the country's largest sector and its starting base (current value) is relatively low. In contrast, agricultural production is not very developed and has low yields, and non-resource production is non-existent. South Sudan is expected to make jumps in both of these sectors in the medium run, coming closer to the averages of sub-Saharan Africa. Therefore the gap is expected to be closed by relatively high growth rates in these sectors.

### **AGRICULTURAL TRADE**

South Sudan's agricultural sector has good potential for growth and for exports. The government has allocated funds to develop the sector and donor projects to improve food security, which involves developing agriculture, are extensive. South Sudan's population is predominantly rural. With the

right allocation of resources to productivity and a readily available labor supply, the sector can make the transition from subsistence production to surplus production.

Figure 5-2  
*Agricultural Trade, 2009-2030*



In the short run (until 2015), agricultural imports are expected to grow much faster than exports and compared to the 2015-2030 period (Figure 5-2). Currently, South Sudan is estimated to have about 187,000 tons of imports as opposed to 68,000 tons of exports. The short-term annual growth rate is expected to be 26 percent for imports and 13 percent for exports. This high import growth reflects the need to improve food security, meet the demand of a population swelling with returnees, and meet the rise in demand for cereals typical of rapid urbanization.

Our forecasts are based on values for cereal production. Because cereal consumption stays level as incomes rise and meat and higher value foods make up more of the diet, we do not expect agricultural consumption growth to remain high in the medium term. The consumption curve for cereals should flatten to sub-Saharan average consumption levels. In the medium term, the growth rate for imports as well as exports is expected to hover around 7 percent to 7.5 percent. Agricultural productivity (yields) and arable land are expected to increase, leading to surplus production and exporting. The export growth rate is expected to be 7.3 percent. Agricultural import growth exceeds export growth in many sub-Saharan Africa countries. We do not believe that will be the case in South Sudan, because after improvements in agriculture, the country is expected to be mostly self-sufficient in cereal production and limit imports to cereals it cannot produce domestically.

Table 5-2  
*Projections for Agricultural Trade (in tons per year)*

Volume of Average Annual Agricultural Trade	2009	2011-2015	2016-2030
Imports	186,698	472,192	1,286,823
Exports	68,305	111,367	300,254
Growth of Annual Trade		2011-2015	2016-2030
Imports		26.1%	7.4%
Exports		13.0%	7.3%

SOURCE: Nathan Associates Inc.

South Sudan's growth prospects in all sectors are uncertain and highly dependent on oil sector revenue and how that revenue is used. We therefore frame growth variations in the agricultural sector in High and Low Scenarios. (Scenarios for the oil sector were presented earlier.) We produced these scenarios using higher/lower estimates for the parameters that feed into the calculation of the deficit model (yield and arable land). Our Base Case country is Chad.

For the High Scenario, we used higher yield estimates based on benchmarks from Ethiopia and Uganda in 2009, whose agricultural productivity is higher than Chad's. High yields are the result of increased mechanization, improved irrigation, and the availability and application of pesticides. Ensuring that government aid to agriculture is allocated appropriately and in a transparent manner is crucial in facilitating reforms that enable higher yields. Under the High Scenario, South Sudan exports more and imports less. Higher production implies that South Sudan will be able to meet domestic demand for cereal consumption and import 73 percent less in 2011-2015 and 65 percent less in 2016-2030 (see Table 5-5). It will also have surplus crops for export. The export growth expected is more than triple the values in the Base Case for both periods. As can be seen in Figure 5-7, South Sudan is projected to have a positive trade balance in the High Scenario as early as 2012. Most of the cereals it imports will be those it cannot produce itself.

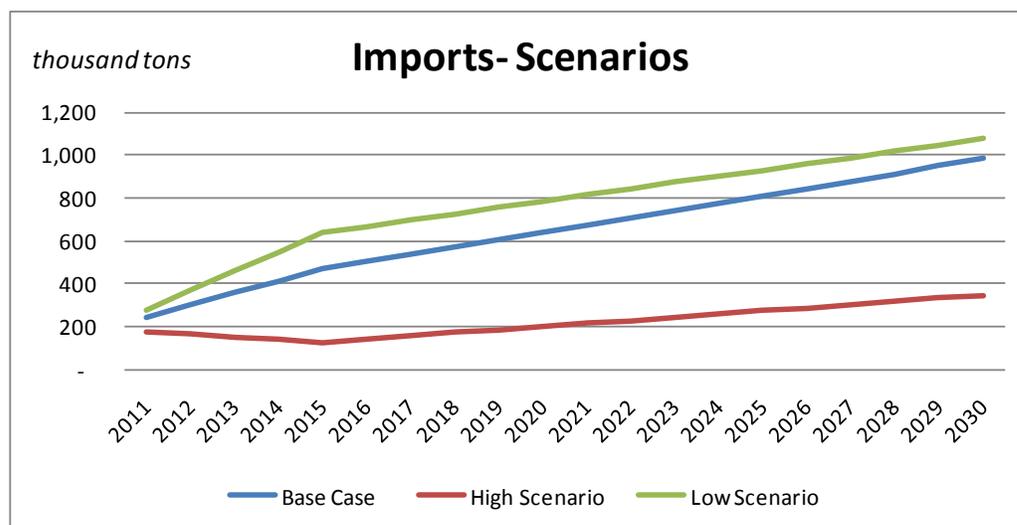
For the Low Scenario, we used lower yield estimates and assumed that arable land would grow only 1 percent annually instead of 2 percent in the Base Case. Under the Low Scenario, South Sudan imports more and exports less (see Table 5-3). Compared to the base scenario, imports increase by 35 percent on average per year in 2011-2015 and 10 percent on average in the 2016-2030 period. Exports decrease by 23 percent compared to the Base Case. The results of this scenario show a trade deficit until the end of the forecast period, although the deficit diminishes over time.

Table 5-3  
*Volume of Average Annual Agricultural Trade, High and Low Scenarios*

	2011-2015 (tons per year)	2016-2030 (tons per year)	Change from Base Case (%)	
			2011-2015	2016-2030
<b>H I G H   S C E N A R I O</b>				
Imports	127,093	346,354	-73%	-65%
Exports	366,084	986,995	229%	229%
<b>L O W   S C E N A R I O</b>				
Imports	639,251	1,075,108	35%	10%
Exports	86,233	232,493	23%	-23%

As can be seen in Figure 5-3, under the High Scenario imports decline over the first period, 2011-2015. This reflects the assumption that the year of secession and likely the following year South Sudan suffers a food crisis and productivity is low as a result of lack of production organization. The High Scenario also assumes that given South Sudan's advantageous agricultural positioning (rural population and ample resources, including water), stability rooted in the new state will allow production to pick up quickly. The population and urbanization will not increase greatly in the next four years so South Sudan can decrease its cereals imports until 2015. In the longer term, as urbanization increases as it has in other sub-Saharan countries, higher incomes will increase cereal consumption and imports of cereals, though still at a very low level compared to Base Case and Low Scenarios.

Figure 5-3  
*Scenarios for Import Growth*



The difference between Base Case and Low Scenarios is not very significant, the gap narrowing even more as it gets closer to 2030. We do not think it is likely that the yields and the arable land expansion

can be so low, given South Sudan’s agricultural potential, that it would expand the gap between Base Case and Low Scenarios. The results of our calculations yield a more uniform difference between the three scenarios of export growth (see Figure 5-4).

Figure 5-4  
*Scenarios for Export Growth*

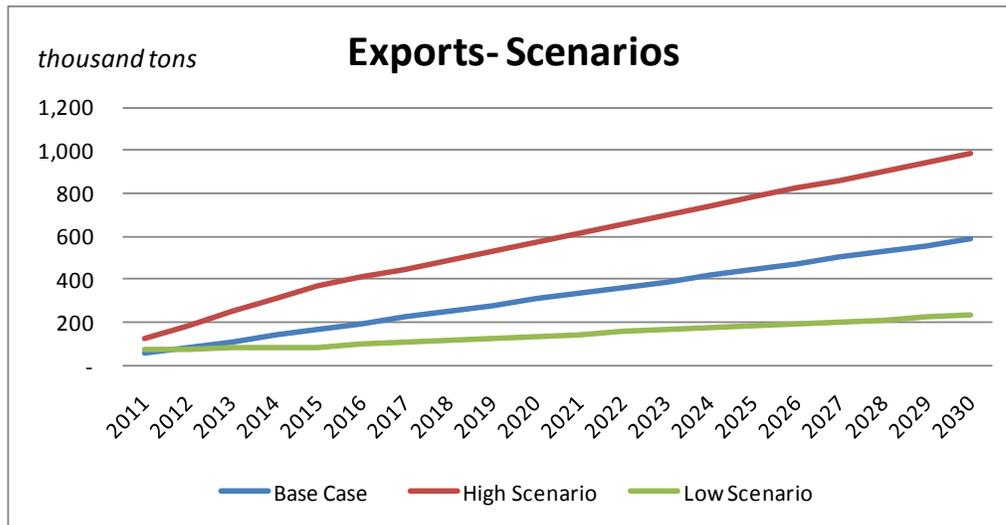
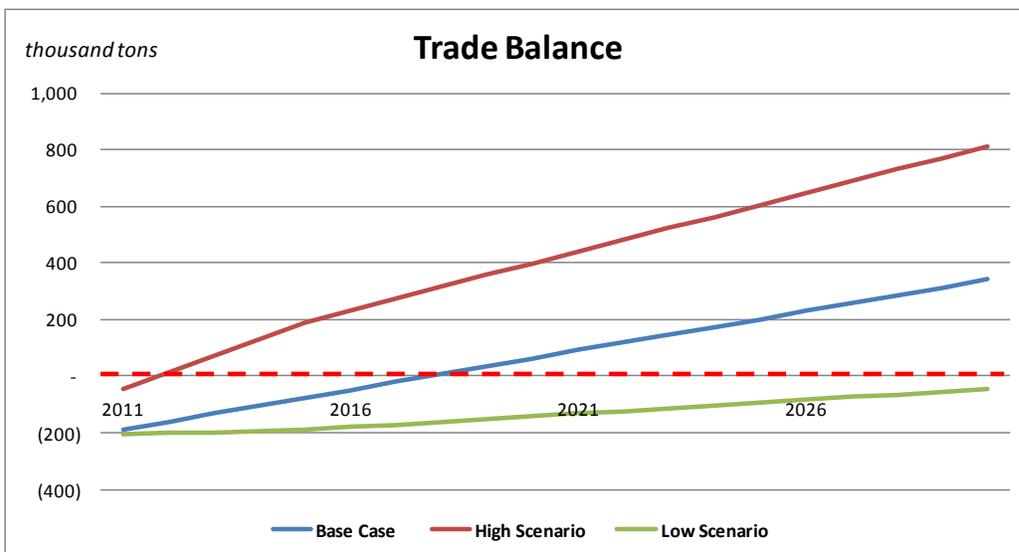


Figure 5-5 shows that under the Base Case scenario, agricultural trade balance is expected to turn positive starting 2018 and reach close to 400,000 tons by 2030. In the High Scenario, the balance turns positive as early as 2012 and increases considerably to reach double the amount of the forecast Base Case balance by 2030. As mentioned earlier, in the Low Scenario the trade balance is expected to stay negative throughout the forecast period.

Figure 5-5  
*Trade Balance Under Three Scenarios*



## NON-RESOURCE TRADE

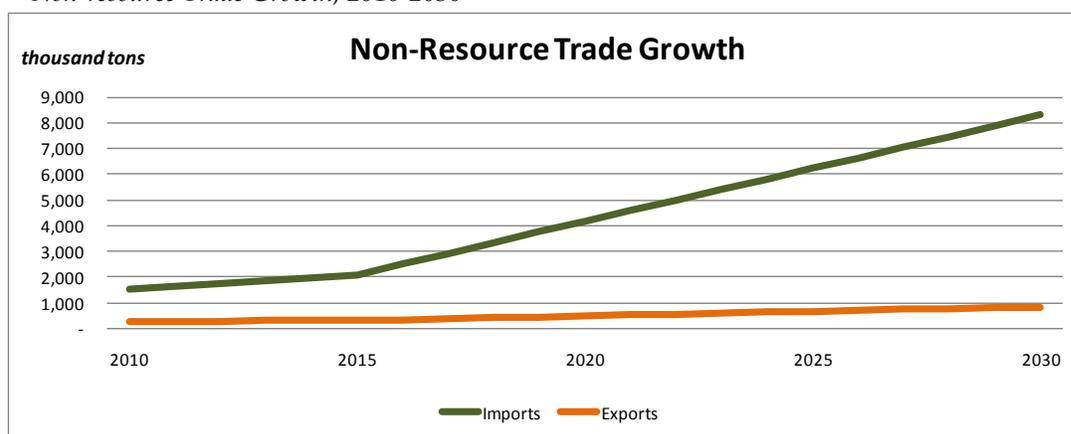
Given the sector's low initial values, non-resource trade will have much higher growth rates than agriculture and oil—9.6 percent annual average growth in the medium term (Table 5-4). Industry should develop quickly, “catching-up” with regional averages, especially if South Sudan uses oil resources effectively for sustainable development. As industry develops, imports of inputs will rise and export growth will also pick up, with 6.8 percent average annual growth in the 2015-2030 period. Due to the large internal needs, we do not expect non-resource export volumes to be high in the near future, increasing faster after 2016 (see Figure 5-6).

Table 5-4  
*Projections for Non-resource Trade (in tons)*

Volume of Trade	2009	2015	2030
Imports	1,514,583	2,096,305	8,291,844
Exports	280,807	311,696	840,061
Growth of Annual Trade		2011-2015	2016-2030
Imports		5.6%	9.6%
Exports		1.8%	6.8%

SOURCE: Nathan Associates Inc.

Figure 5-6  
*Non-resource Trade Growth, 2010-2030*

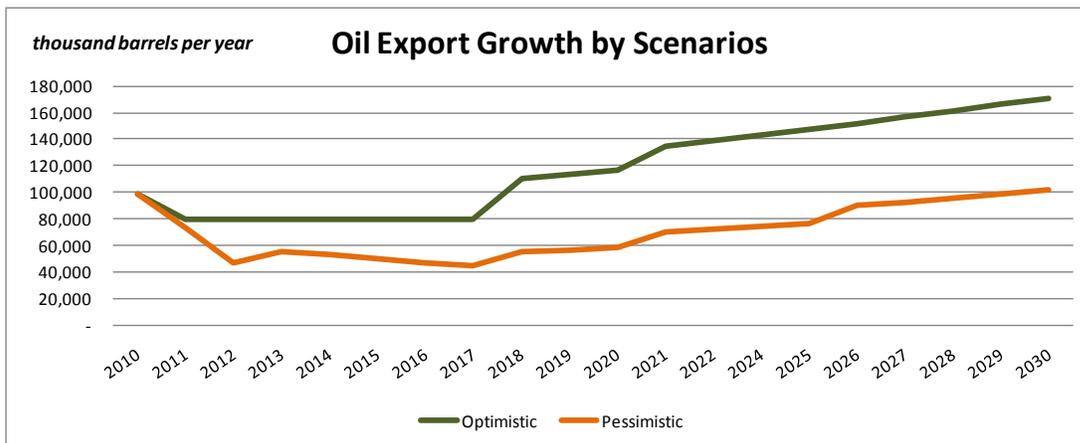


## OIL TRADE

Even though the oil sector is the richest of the three sectors, it will have the lowest growth. Before production ceased due to disputes with Sudan, South Sudan already produced a considerable amount of oil—3365, 025 barrels per day (2009). Resources are also expected to be depleted in the next two decades or less unless new fields are discovered. Therefore, there is not much room for high growth. South Sudan's precarious political situation makes it difficult to predict the size and direction of the economy. Other elements of uncertainty particular to the sector include the absence of a pipeline for

exports and the lack of an oil refinery. Once a refinery is built, South Sudan will most likely not import fuel and will have surplus to export. The time when the oil refinery begins operations will determine South Sudan’s trade balance in the oil sector.

Figure 5-7  
Oil Export Growth by Scenario, 2010-2030



We incorporated these uncertainties into two oil forecast scenarios, Optimistic and Pessimistic, described in detail above. In the optimistic scenario, about 2.3 million barrels of oil will be exported between 2011 and 2030 and the average annual growth in exports will be 4.1 percent. In the pessimistic scenario, about 1.3 million barrels will be exported between 2011 and 2030 and the average annual growth in exports will be 1.7 percent. South Sudan will have to import fuel until a refinery is built, so we also forecast fuel imports until 2017, which when we estimate that the oil refinery will be operational (see Table 5-5).

Table 5-5  
Fuel Imports, 2010-2017

	2010	2011	2012	2013	2014	2015	2016	2017
Barrels per day	3,300	3,535	3,786	4,056	4,345	4,654	4,985	5,340

## Traffic Allocation

Currently, the busiest corridor carrying agricultural goods and merchandise trade traffic to South Sudan is “Mombasa-Kampala-Nimule-Juba” corridor. This is in part because some of the goods destined to Juba are being imported by Ugandan firms and once the goods arrive to Kampala, they are then sent onwards to Juba. We expect that this traffic pattern will change as ICDs are relocated to the Gulu area in order to make the goods transport more efficient. This trend is already occurring as we were informed during the interview phase.

For the purposes of traffic allocation we are assuming a traffic split between the alternative routes. We know that at the moment about 2 percent of the traffic is being transported through Nadapal (due to

bad roads and security concerns) with the bulk of the traffic concentrated on Nimule and Kaya to a lesser extent (also due to bad roads). For forecasting purposes we assumed that the largest percentage of traffic will continue to travel through Nimule (85 percent in 2015 down to 70 percent in 2030) due to its relatively short distance, condition and capacity of its roads while Kaya and Nadapal will capture increasing shares due to improved road maintenance.

From January 2012 to August 2012, South Sudan and Sudan were disputing fees for the use of the pipeline to Port Sudan, and South Sudan suspended oil production. In August, the two countries agreed on a lower transport fee. Because oil constitutes 98 percent of its government revenue, South Sudan was pressed to resume oil production. The significant volumes of oil it produces and its shaky relationship with Sudan makes it imperative that South Sudan consider alternative scenarios for oil transport, one through Sudan and another through Kenya. The large volumes of produced can only be transported by pipeline. Our Base Scenario will consider the use of the pipeline to Port Sudan and an Alternative Scenario will consider the failure to maintain the transport agreement with Sudan and the need to transport oil to Kenya via existing modes and a new pipeline. Because it will take about five years to plan, construct, and put in operation a new pipeline to Kenya (possibly Lamu), oil would have to be transported in the meantime by road and/or rail, both of which modes are far from ideal.

**Base Case.** Under our Base Case Scenario, traffic allocation considers the use of the Port Sudan pipeline to transport oil production and remove this cargo from the East African connections. It assumes the rehabilitation of the Tororo-Pakwach railway by 2015 and construction of a multimodal transfer station in Gulu, also by 2015. Figure 5-8 reflects the rising importance of the Mombasa-Eldoret-Nadapal-Juba and Mombasa-Lira-Gulu-Nimule-Juba corridors resulting from improvement in road conditions. The largest shares of road traffic and road traffic growth are achieved by 2023. Both of these corridors offer the shortest routes to Mombasa.

Figure 5-9 shows total traffic allocation, including rail traffic captured by the Mombasa-Tororo-Gulu and the Mombasa-Kampala segments. We note that all oil exports have been removed from the corridors under consideration since it is assumed that oil is transported north using the Port Sudan pipeline.

Table 5-6 and Figure 5-10 shows the Base Case Scenario corridor and mode traffic allocation expected by 2015 and 2030. In 2015, more than 300,000 tons are expected to be transported by rail. This assumes that the reconstruction of the Tororo-Gulu-Pakwach railway is completed by 2015. Mombasa-Kampala-Nimule-Juba will still be the most used corridor (63 percent of traffic). By 2030, rail traffic reaches close to 2 million tons and corridor distribution is significantly different, with 38 percent of traffic in the Mombasa-Lira-Gulu-Nimule-Juba corridor and 30 percent in the Mombasa-Eldoret-Nadapal-Juba corridor. Figure 5-10 shows that overall traffic grows four times between 2015 and 2030 and that rail share doubles from 10 percent to 20 percent.

Figure 5-8  
Base Case, Road Traffic Allocation to Corridors

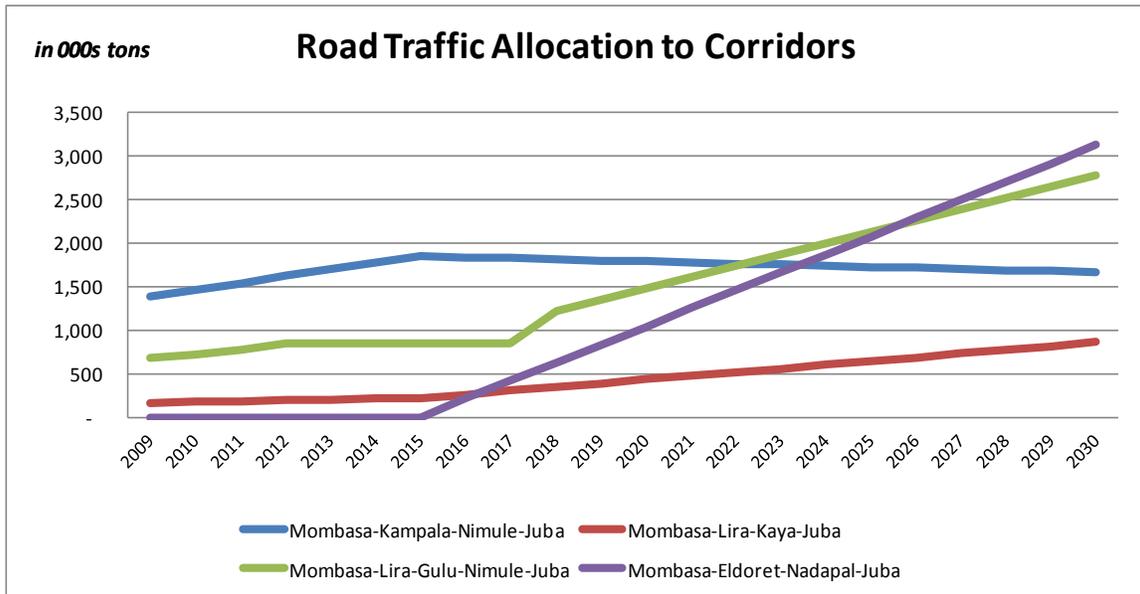


Figure 5-9  
Base Case, Total Traffic Allocation to Corridors

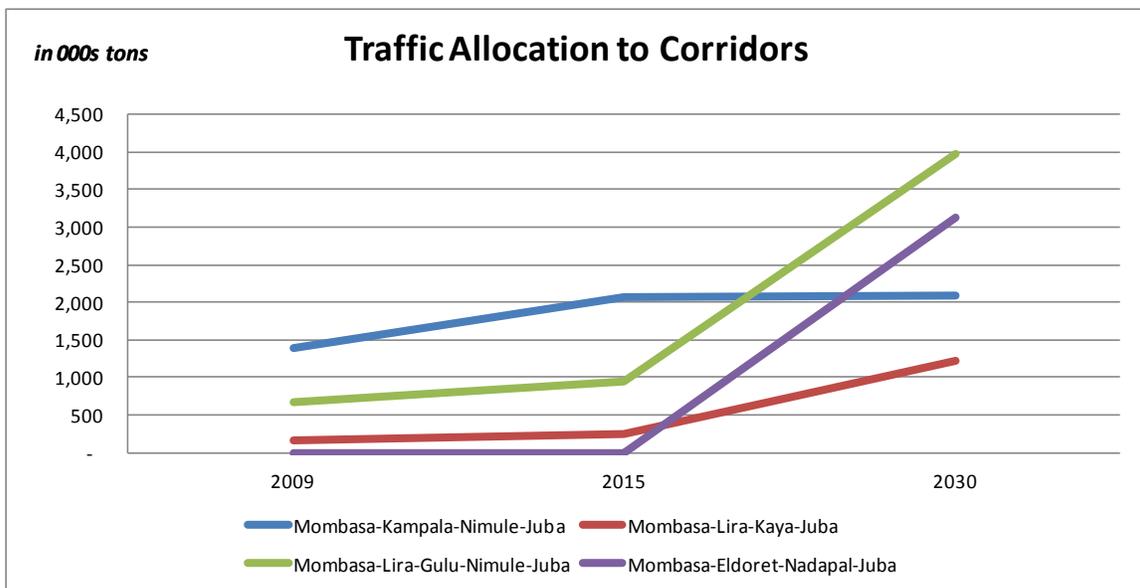
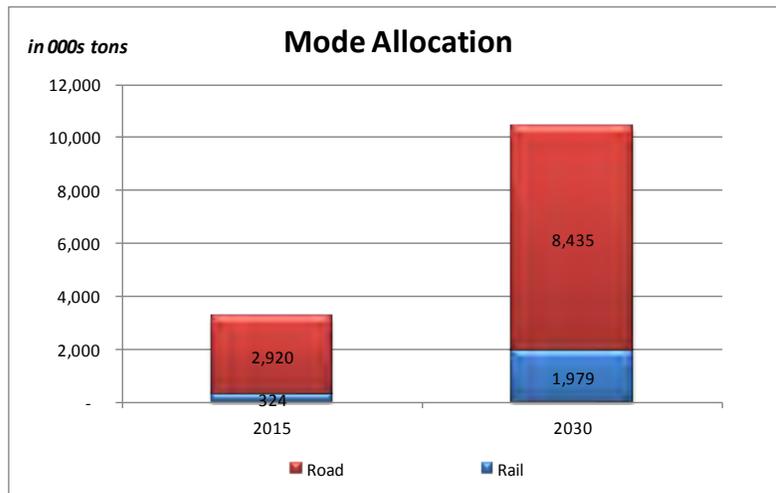


Table 5-6  
*Base Case, Mode Allocation of Traffic by Corridor (tons)*

Corridor	2015				2030					2015-2030 CAGR
	Rail	Road	Total	Share	Rail	Road	Pipeline	Total	Share	
Mombasa-Kampala-Nimule-Juba	205,973	1,853,758	2,059,732	63%	416,552	1,666,210	-	2,082,762	20%	0.1%
Mombasa-Lira-Kaya-Juba	23,982	215,836	239,818	7%	368,055	858,796	-	1,226,851	12%	11.5%
Mombasa-Lira-Gulu-Nimule-Juba	94,503	850,524	945,027	29%	1,194,017	2,786,039	-	3,980,055	38%	10.1%
Mombasa-Eldoret-Nadapal-Juba	-	190	190	0%	-	3,124,144	-	3,124,144	30%	91.0%
<b>TOTAL</b>	<b>324,458</b>	<b>2,920,309</b>	<b>3,244,766</b>	<b>100%</b>	<b>1,978,624</b>	<b>8,435,188</b>	<b>-</b>	<b>10,413,812</b>	<b>100%</b>	<b>8.1%</b>

Figure 5-10  
*Base Case, Mode Allocation, 2015-2030*



**Alternative Scenario.** Under our Alternative Scenario, traffic allocation reflects the need for existing infrastructure to accommodate large amounts of oil and assumes that the Tororo-Pakwach railway is rehabilitated by 2015. Given the amount of South Sudan’s oil exports we estimate that the capacity of the railway from Gulu to Mombasa will be reached and remaining oil exports will be accommodated by road transport and, if it is possible to also operate for exports, by the Eldoret-Mombasa pipeline. This allocation will be temporary and will change when the South Sudan-Kenya (Lamu) pipeline is completed in 2017.

Figure 5-11 shows the Mombasa-Lira-Gulu-Nimule-Juba corridor taking the largest share of traffic between 2012 and 2017 due to the oil exports. Once the pipeline to Lamu is opened and oil exports are removed from the corridors shown, the Mombasa-Kampala-Nimule-Juba takes the largest share of the traffic.

Figure 5-11  
Alternative Scenario Road Traffic Allocation to Corridors, 2009-2030

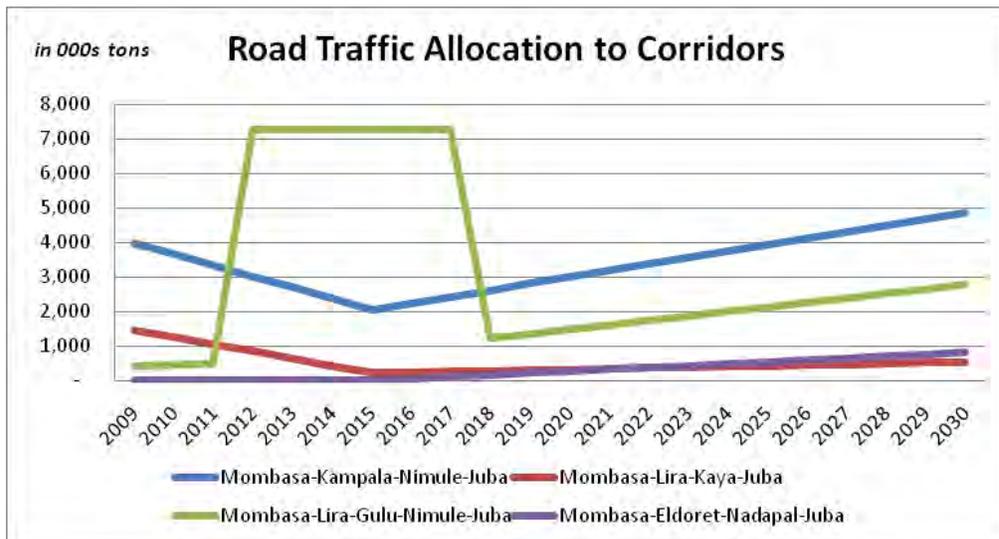
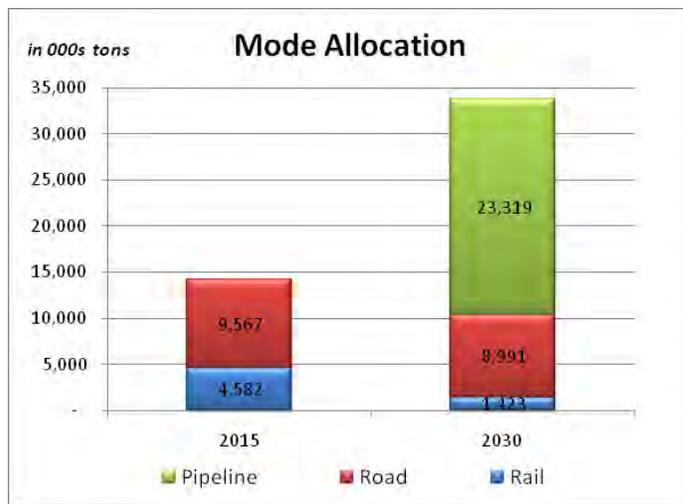


Table 5-7 and Figure 5-12 show the mode allocation of traffic expected in 2015 and 2030 for the Alternative Scenario. In 2015, more than 4.5 million tons are expected to be transported by rail (assuming that Tororo-Gulu-Pakwach railway reconstruction is completed by 2015). Most of those tons are oil exports and this volume represents railway capacity. The rest of trade traffic reaches 9.6 million, 6.5 million of which are oil exports. By 2030, all oil export traffic is allocated to the Lamu pipeline and the remaining traffic belongs to merchandise and agricultural trade (see Figure 5-9).

Table 5-7  
Alternative Scenario Mode Allocation of Traffic by Corridor (tons)

Corridor	2015				2030					2015-2030 CAGR
	Rail	Road	Total	Share	Rail	Road	Pipeline	Total	Share	
Mombasa-Kampala-Nimule-Juba	-	2,059,732	2,059,732	15%	-	4,864,812	-	4,864,812	14%	6%
Mombasa-Lira-Kaya-Juba	23,982	215,836	239,818	2%	228,953	534,223	-	763,176	2%	8%
Mombasa-Lira-Gulu-Nimule-Juba Oil	4,557,656	6,346,225	10,903,881	77%	-	-	23,319,490	23,319,490	69%	5%
Mombasa-Lira-Gulu-Nimule-Juba Non-Oil	-	945,112	945,112	7%	1,194,017	2,786,039	-	3,980,055	12%	10%
Mombasa-Eldoret-Nadapal-Juba	-	210	210	0%	-	805,769	-	805,769	2%	73%
TOTAL	4,581,638	9,567,115	14,148,752	100%	1,422,969	8,990,843	23,319,490	33,733,303	100%	6%

Figure 5-12  
Alternative Scenario Mode Allocation, 2015 and 2030



## 6. Proposed Projects and Action Plan

In this chapter, we identify the strategies and projects to improve transport efficiency for South Sudan and a set of projects to be implemented in the near-term as part of an integrated Action Plan.

### Approach

The short to medium-term strategy proposed for improving transport connectivity between South Sudan and East Africa's transport system requires consolidating and expanding the relatively better developed routes before addressing other, no less important routes, but less developed routes nonetheless.

For South Sudan the most developed link with East Africa is the Juba – Nimule road, which is due to be completely paved by mid-2012. This road, the first main road to be paved in South Sudan, joins the Uganda road system at the Nimule border post. It is also the most utilized route for South Sudan's external trade traffic, except petroleum or crude oil exports (which were exported via pipeline to Port Sudan). Other routes include Juba – Yei – Kaya border post (with Uganda) and Juba – Torit – Nadapal border post (with Kenya).

Accordingly, short and medium-term development strategies will involve these routes in South Sudan and the links to Mombasa port via Uganda, through the Nimule and Kaya border posts, and via Kenya, through the Nadapal border post which include important connections for regional trade to Kampala and Nairobi. These links involve Mombasa port, roads and rail in Kenya and Uganda, as well as pipeline transport from Mombasa to Eldoret/Kisumu in Kenya. The links to Dar es Salaam from Kampala that could also be used have been dealt with under the East Africa CDS. Long-term strategies will include developing the Lamu corridor.

For the sake of integrated development, improvement of links to East Africa should be complemented by development of internal road, rail and river transport links. These will also provide links to Sudan in the North and other neighboring countries including Ethiopia, DR Congo, and Central African Republic. The short- to medium-term strategies presented below focus on links with East Africa.

## Road Transport

### INFRASTRUCTURE

As indicated in Chapter 4, sections in the road links have capacity constraints, are congested, or have poor surface conditions (Table 6-1). The proposed strategy is to improve these links and remove the constraints as quickly as possible by

- Adding lanes (e.g., climbing lanes or extra lanes) to upgrade capacity;
- Rehabilitating paved roads to restore surfaces deteriorated beyond what can be helped with preventive and routine maintenance; and
- Paving heavily trafficked gravel roads. Gravel roads carrying more than 200 vehicles per day have poor riding quality conditions, are costly to users, and drive up routine maintenance costs for road authorities.

Table 6-1  
*Road Link Constraints*

Road Link	Country	Distance (km)	Major Constraint	Route Priority
Mombasa–Eldoret–Malaba–Tororo - Kampala	Kenya and Uganda (Northern Corridor)	1,185	Capacity (congested in many parts)	1
Tororo–Lira–Gulu	Uganda	429	Very poor surface condition	1
Gulu–Nimule	Uganda	126	Unpaved & very poor surface	1
Nimule–Juba	South Sudan	192	Completing paving (mid 2012)	1
Kampala –Gulu	Uganda	332	Poor surface	1
Lira–Pakwach–Arua–Kaya	Uganda	378	Partly unpaved & very poor surface	2
Kaya–Yei–Juba	South Sudan	235	Unpaved & very poor surface	2
Eldoret–Lodwar–Nadapal	Kenya	627	Partly unpaved & very poor surface	2
Nadapal– Torit–Juba	South Sudan	363	Unpaved and very poor surface	2
Total		3,867		

### MAINTENANCE

As roads are developed, upgraded, and rehabilitated in South Sudan their scheduled maintenance must be assured, lest they simply deteriorate again. In many countries, including in East Africa, the main reasons for road deterioration are (1) deferral of maintenance due to inadequate financing and (2) rampant overloading. To ensure regular maintenance, the East Africa CDS proposed that the core corridor roads be put under a long-term performance-based contract. The contract would require roads to be kept at an agreed condition and protected from the ravages of overloading. The contract could be financed through a number of sources, including road public funds (from Road Fund/Government and, in some cases, possible tolling). Some sections could become full “toll roads” given their traffic volumes and commercial viability.

The same proposal should also be considered in South Sudan, starting with the soon-to-be-completed first paved major corridor road from Juba–Nimule. This initiative will entail (1) an assessment to identify technical, legal, institutional, financial, and methodological frameworks and approaches to long-term contracts, as well as to define possible packages/sections to be put under such contract; and (2) transaction advisory services to structure contracts, prepare RFPs and assist with procurement of maintenance contractors.

## **IMPROVED VEHICLE OVERLOAD CONTROL SYSTEM**

An important action that South Sudan needs to implement is the adoption of an improved vehicle overload control system that is compatible with the ones in the East African countries.

Article 90(l) of the EAC Treaty commits partner states to common rules and regulations governing the dimensions, technical requirements, gross weight and load per axle of vehicles used in trunk roads in the Community. In July 2008, member states agreed on harmonization of axle mass loads, gross vehicle mass limits, a formula for the protection of bridges, and tolerance factors for overloads (i.e., grace percentages that do not attract penalties). They also agreed to ban quadrem axles and to decriminalize overloading by adopting a system of administrative penalties to recover the economic cost of damage inflicted by overloaded vehicles. So far, members have made little progress in amending legislation to adopt harmonized standards and only Tanzania has introduced administrative penalties for recovering the economic costs of road damage.

All members are investing in road infrastructure and some are contracting for road management by private firms. Effective overload control is essential to extract maximum economic benefit from this investment. Investment in railway systems is also ongoing and the ability of rail to compete with road transport also depends, significantly, on effective measures to deter overloading of trucks. The current overload control strategy is to inspect all commercial vehicles without regard to risk or incentive for truckers' self regulation. The 100 percent inspection rate lengthens journey times and encourages corruption, while differences in national limits complicate cross-border operations. There is no regional consistency in frequency of checks as some states (Burundi, Rwanda) have no weighbridge infrastructure.

Overload controls are more effective when weighbridge staff and law enforcement officers are trained to apply the new rules and the trucking industry understands the rules and their application. Securing industry cooperation from an early stage also improves compliance. Once legislation is final, workshops and information sessions should be held with the trucking industry and weighbridge and enforcement personnel should be trained.

Technical assistance is initially required to assist member states in aligning legislation on vehicle limits with regional standards and to pass new regulations providing for administrative penalties. All states need to revise legislation to adopt the regional limits (Tanzania has already adopted new rules for administrative penalties).

In the long term, technical assistance can be extended for (1) development of regional overload control strategy that uses targeted enforcement based on risk management (e.g., focusing on specific vehicles and cargo types prone to overloading, establishing databases to develop profiles of frequent offenders, adopting other enforcement measures that target high-risk truckers); and (2) introduction of measures that encourage truckers' self-regulation, such as the accreditation of compliant truckers.

Cooperation by line function ministries and Attorney-Generals' Chambers to process legislation is a precondition for success. Without a legislative basis, the remaining legal, regulatory, and institutional components (presented later in this section) of the technical assistance cannot be implemented.

## **Mombasa Port**

As the gateway for the corridor, the Port of Mombasa must have adequate capacity and perform efficiently if the overall corridor performance is to improve. Strategies for removing constraints at the port were proposed in the CDS but those proposals have yet to be implemented.<sup>45</sup> Below we describe key strategies for the next five years, as well as a few more for providing dedicated service of South Sudan traffic.

### **CONTAINER OPERATIONS**

The CDS assessment of the port identified capacity constraints and low productivity as key challenges for container operations. To increase capacity, Berths 18 to 19 will be extended by 2013 and Phase 1 of a new container terminal at Kipevu West will be complete by 2015. Meanwhile, conditions worsen. To smooth operations in the interim, the CDS proposed streamlining the use of CFS, through their operational integration with the marine yard. Whatever the constraints may be, they are not insurmountable especially when one considers their very high cost and that they will only get worse if left unaddressed.

### **DRY BULK AND GENERAL CARGO**

Dry bulk at Mombasa has also increased substantially, by about 75 percent between 2005 and 2010. Plans to develop faster handling systems entail installing better cranes, installing conveyor systems, instituting systematic yet flexible berth assignment, reviewing silo and other storage systems, and deepening berths to allow for larger ships that can increase port throughput and reduce operating costs for the port and logistics costs for the shipper. General cargo is static or has decreased as more cargo is moved in containers. This traffic tends to be handled wherever there is a berth with sufficient depth and availability.

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<sup>45</sup> In fact, container handling seems to have worsened; shipping lines recently issued notice that they will impose port surcharges on containers if the long ship delays are not reversed.

## **LIQUID BULK**

The Port of Mombasa requires additional capacity to handle liquid bulk cargo. Kipevu Oil Terminal handles crude oil and refined oil products and can accommodate vessels to 85,000DWT and up to 198 meters long. The East Africa CDS observed that the terminal was operating at full capacity and estimated that vessel delays to berth cost the petroleum industry an average of US\$100 million annually.

Offshore petroleum offloading facilities are planned or are being developed to meet the need for liquid bulk capacity through a BOT project for a single buoy point or offshore jetty system. In the short to medium term, the main supply of petroleum for South Sudan will in the short to medium term be through Mombasa—given the suspension of production of petroleum in South Sudan and the hostile relations with Sudan in the north. Handling this supply will add volume to an already congested terminal.

## **Rail Transport**

South Sudan does not use rail directly, except for the goods procured from Uganda or Kenya, which may have been carried from Mombasa by rail originally. The system is in poor condition, inefficient and in some sections inoperable. Nevertheless, the rail system should be used as much as possible to lower transportation costs and handle higher volumes.

The reinvigorated RVR management is improving the capacity and efficiency of the primary system between Mombasa and Kampala. There are plans to rehabilitate the section from Tororo–Gulu–Pakwach. Upon completion of these improvements, South Sudan traffic could be carried by rail between Mombasa and Gulu/Pakwach thus limiting the more expensive road transport to Gulu–Nimule–Juba only. Therefore, the strategy for rail is to accelerate development of capacity on the Mombasa–Tororo section and rehabilitate Tororo–Gulu–Pakwach. This should include development of a rail/road intermodal exchange facility, especially at Gulu. With adequate cargo, scheduled and efficient block trains of South Sudan traffic could run between Mombasa and Gulu.

For the long term, extending the rail from Gulu to Juba is worth considering, as well as extending the network internally in South Sudan. This will have to be studied, taking into account development of the Lamu corridor.

## **Pipeline Transport**

Using the Mombasa to Eldoret/Kisumu pipeline for on-land transport of South Sudan petroleum products would help remove tanker trucks from the roads and make for better handling of higher volumes at lower cost. South Sudan trucks have been observed picking petroleum products at depots in Kisumu/Eldoret and Kampala. These products are transported on the pipeline for the respective companies.

There are plans to expand the capacity of the pipeline. The strategy is to include the needs of South Sudan in such capacity expansion and to establish formal contracts for transportation of the South Sudan products by pipeline from Mombasa to Eldoret/Kisumu. The medium-term strategy for extension of the pipelines should be considered taking into account the development of the Lamu corridor pipeline and the system to handle Uganda petroleum when in full production.

## River Transport

A key South Sudan's north-south transport link, the Nile River, is seriously silted and its transportation capacity curtailed. Interventions to improve the river transport system include:

- Dredging and removal of river bed weeds as well as management of river courses along the river;
- Improving and developing docking and cargo handling facilities, especially at major ports along the river;
- Installing navigational aids; and
- Renewing the river fleet, such as the tugs and barges, expected mainly by the private sector.

## Legal, Regulatory, and Institutional Components

The following are the main factors influencing the development of the Action Plan:

- Fragmented governance of South Sudan's transport sector compromises the effectiveness of transport regulation, encourages competing claims by government agencies to exercise authority over road transport in particular, and complicates the introduction of transport facilitation measures on corridor such as Nimule - Juba. As shown in Table 6-2, three national government ministries oversee the sector. Further fragmentation occurs at state level.

Table 6-2  
*Institutional Framework for Transport Sector*

Mode	Ministry of Transport	Ministry of Roads and Bridges/SSRA	Ministry of Interior/Nat'l Police	State Ministries of Infrastructure/Roads	State Police
Roads	Set vehicle load limits and penalties	Policy and executive functions for int'l and interstate roads	Enforcement	Policy and executive functions for interstate roads	Enforcement
Road transport and traffic	Policy		Executive functions (incl. enforcement)		Executive functions (incl. enforcement)
Railways	Policy and executive functions				
River	Policy and executive functions			Concurrent policy and executive functions	

- South Sudan recently introduced institutional reforms in the roads sector that align it with road management approaches adopted elsewhere in sub-Saharan Africa. The establishment of a Roads Authority (SSRA) is an important step in improving governance of roads. The new law also clearly delineates responsibility between national and state governments for various classes of roads. A regulatory framework for axle load control must still be put into place, along with appropriate weighbridge infrastructure. This needs to be coordinated between the MoT and Ministry of Roads and Bridges. Further institutional reforms are needed to place road financing on a firmer footing by establishing a Road Fund.
- Whereas there is a clear delineation of responsibility between the national and state governments for road infrastructure, the situation relating to road transport and traffic is unclear. The MoT formulates policy for the subsector, but has a limited executive role (registration of government, diplomatic, and NGO vehicles). Most executive functions are undertaken by the police, but to a large extent this is devolved to State Police forces acting with a great deal of autonomy. Theoretically, the police report to the Ministry of the Interior, but in practice there is limited oversight of their regulatory role in road transport and traffic. The MoT is also in charge of legislation governing vehicle loads, but the SSRA (under the Ministry of Roads and Bridges) is charged with ensuring compliance.
- Existing and proposed road transport legislation is “inward-looking” and is silent on the facilitation and/or regulation of international transport services. Nor has the government yet adopted a decision regarding future memberships of the RECs. As a result, proposed legislation (the *Road Traffic and Safety Bill 2011*) provides no policy guidance or regulatory framework for international road transport. The transport facilitation instruments designed by the RECs to reduce barriers to cross-border transport are not being applied in South Sudan.
- The absence of a regulatory framework for international road transport creates a void in which national and state government agencies compete for authority. The truck-related charges imposed on foreign vehicles at Nimule are evidence of such competition. The absence of a clear legal basis for these charges and vague and sometimes overlapping nature of the charges reinforces this conclusion. That the truck-related charges are clearly for revenue generation rather than economic, safety or environmental regulation is clear from the absence of a regulatory framework.
- Road transport lacks a regulatory framework for improving sector efficiencies and standards or professionalizing the industry. South Sudan’s transport industry is weak and poorly organized. While the 2007 National Transport Policy articulates a vision for the industry, the proposed *Road Traffic and Safety Bill 2011* fails to pick up on this vision or to set in motion of process for building industry capacity.
- Customs administration is in a state of flux and policy and legislation is unclear. Plans are afoot to adopt a new law and customs tariff, and to implement institutional reforms by establishing a National Revenue Authority. Meanwhile, the lack of a clear policy framework results in incorrect levying of taxes on goods transported on the Nimule – Juba corridor and the confusing application of different tariffs in different parts of the country. There is an absence of a comprehensive fiscal framework between national government and the states. As a result, both national and state

governments are targeting transport services and commodities transported on the Nimule-Juba corridor to raise revenue. There are several donors actively supporting this reform.

- Corridor users are not organized and there is no representative corridor organization through which users can speak to government. International haulers are largely foreign-owned, domestic haulers mostly ply the local market. These divergent interests weaken the ability of international haulers to engage authorities on transport and trade facilitation matters.

## Action Plan

Moving from strategy to implementation requires an integrated Action Plan that covers infrastructure constraints and bottlenecks, operational inefficiencies, policies, and procedures. Overall, we recommend that USAID pursue technical assistance interventions that improve transport operations and policies and that help realize the benefits of proposed infrastructure investments.

Consistent with the goals and objectives of the SSCDS and its technical analysis, we selected projects for the Action Plan on the basis of three criteria:

1. Estimated impact on corridor performance as measured by the factors of price, time, and reliability;
2. Estimated economic impact as measured by the economic internal rate of return; and
3. Readiness for near-term implementation.

We used our traffic forecasts to determine the optimal capacity of the projects and estimate their potential benefit.

The proposed projects are presented in the Table 6-3. The plan presents 19 projects—14 road projects, three rail projects, one river transport project, and one oil pipeline transport project<sup>46</sup>. Of these, 14 are related specifically to infrastructure improvement and five to operations/regulations. They have a total cost of US\$2.58 billion. It is anticipated that eight projects could be implemented under a PPP arrangement with varying degrees of private sector participation.

All proposed projects are deemed to have a medium to high economic viability and have the potential to start implementation in the very near future.

Projects are presented by transport mode. Detailed project profiles are presented in Appendix A. Those profiles present the project background and rationale, agencies involved, a description of major components, critical factors for success, related projects and expected benefits/impacts. Cost estimates by major component are also provided.

Other projects beyond the short to medium actions recommended here are necessary to expand transport capacity in preparation for the expected huge volumes of traffic. And there are in fact plans

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<sup>46</sup> The table does not include the proposed oil pipeline project to Lamu as this is already being considered and managed at high levels of South Sudan government and its regional partners. As stated elsewhere, we have assumed that the pipeline would be constructed and operational by 2017.

and ongoing efforts to develop new port capacities, modernize and expand rail transport, and upgrade and expand roads. We have reflected on these plans and expect that clear development options and strategies will have emerged by the time the Action Plan is implemented. Still, we consider the plan a good foundation for future developments. If followed, it will create corridor infrastructure that gives potential investors in economic or traffic-generating activities the confidence to invest. Such investment, in turn, will spur demand for implementation of long-term projects being proposed.

Table 6-3  
Action Plan Projects

Project	Country	Invest. Start Year	Dist. (km)	Cost (US\$ m)	EIRR %	PPP Potential
<b>I N F R A S T R U C T U R E P R O J E C T S</b>						
<b>ROADS</b>						
Gulu - Nimule (paving)	Uganda	2012	126	101	23	Yes
Tororo - Lira - Gulu (Rehab)	Uganda	2012	429	343	17	Yes
Kampala - Gulu (Rehab)	Uganda	2012	332	266	16	Yes
Juba - Yei Kaya (paving)	South Sudan	2015	235	270	15	No
Lira - Pakwach - Arua - Kaya (paving)	Uganda	2015	378	302	16	No
Juba - Torit - Nadapal (paving)	South Sudan	2015	363	417	26	No
Lodwar - Nadapal (paving)	Kenya	2015	245	196	30	No
Eldoret - Lodwar (paving)	Kenya	2015	382	306	30	No
Subtotal, roads			2,490	1,061		
<b>RAIL</b>						
Reconstruction of Tororo-Gulu-Pakwach Railway	Uganda	2015	500	325	24	Yes
ICD Gulu Railway Intermodal	Uganda	2015	n.a.	10	58	Yes
ICD Juba Freight Station	South Sudan	2015	n.a.	15	165	Yes
Subtotal, rail				350		
<b>RIVER</b>						
Developing River Transport	South Sudan	2015	n.a.	25.2	n.a.	
<b>SUBTOTAL , Infrastructure</b>				2,577		
<b>T E C H N I C A L A S S I S T A N C E</b>						
Corridor road maintenance contracting system	South Sudan	2014	n.a.	1.00	n.a.	Yes
Develop facilities to accommodate increased South Sudan petroleum on Mombasa - Eldoret Pipeline	Kenya, South Sudan	2014	n.a.	0.50	n.a.	Yes
Develop axle load regulations	South Sudan	2012	n.a.	0.55	n.a.	No
Develop regulatory framework for road transport and facilitation of international road transport	South Sudan	2012	n.a.	0.20	n.a.	No
Establish transport observatory on the Nimule-Juba road to monitor nontariff barriers and other constraints on transport efficiency	South Sudan	2012	n.a.	1.20	n.a.	No
Establish Nimule-Juba Corridor Committee	South Sudan	2012	n.a.	0.22	n.a.	No
Total, technical assistance				3.67		
<b>TOTAL</b>				2,580.2		

Note: Cost estimates for potential development of oil facilities for South Sudan exports

# **Appendix A. Profiles of Proposed Projects**



<b>No. Name</b>	INFR-RD-01 South Sudan Corridor Roads Upgrade to Paved and Rehabilitation	<b>Action Plan Period</b>	2012-2015 and 2015-2010
<b>Mode/Subject</b>	Road	<b>Intervention Type</b>	Infrastructure
<b>Corridor</b>	South Sudan Corridor, E.A. Northern Corridor	<b>Countries</b>	South Sudan, Uganda, Kenya
<b>Agencies Involved</b>	Road Authorities, Government Ministries Responsible for Roads and Finance		
<b>Related Projects (Donors)</b>	USAID, Others		

### **Background/Rationale**

The economic functioning and development of newly independent South Sudan depends on access to the marine port of Mombasa, its gateway for international trade. The corridor to Mombasa through Uganda and Kenya carries more than 90 percent of South Sudan's import and export traffic. This was so for the transport of relief supplies during the war for independence and the transition to independence. Poor relations with Sudan in the North have heightened South Sudan's dependence on the corridors to East Africa.

### **Status**

The road between Juba and Nimule is being paved with USAID support. There are plans to develop other roads. However, for the corridor from South Sudan to Mombasa, a number of road sections need to be upgraded from gravel to paved standard or rehabilitated. These roads, listed below, are the weak links in the corridors and are responsible for long delays and the higher costs of freight movement.

### **Description/Major Components**

The costs include (1) Project preparation to bankable stage; (2) mobilizing investment; (3) construction.

### **Critical Factors for Success**

(1) Commitment and ability of various authorities under which the proposed roads fall to managing preparation of bankable projects; and (2) financing for project preparation and construction.

### **Expected Benefits/Impacts**

The project will remove impediments to South Sudan's trade and economic growth, and lower transport costs. Estimates of the EIRR for each proposed road section are presented as an indication of the level of benefits each project is expected to generate.

## Costs and Other Data

The average costs used for projects in other countries is \$800,000/km and for projects in South Sudan is \$1,150,000/km.

Component	Country	Invest. Start Year	Dist. (km)	Cost (US\$ million)	EIRR %	PPP Potential
Main Corridor (Juba-Nimule)						
Gulu - Nimule (paving)	Uganda	2012	126	101	23	No
Tororo - Lira - Gulu (Rehab)	Uganda	2012	429	343	17	No
Kampala - Gulu (Rehab)	Uganda	2012	332	266	16	No
Subtotal on main corridor			887	270	15	
Alternative Corridor				302	16	
Juba - Yei Kaya (paving)	South Sudan	2015	235	417	26	No
Lira - Pakwach - Arua - Kaya (paving)	Uganda	2015	378	196	30	No
Juba - Torit - Nadapal (paving)	South Sudan	2015	363	306	30	No
Lodwar - Nadapal (paving)	Kenya	2015	245	101	23	No
Eldoret - Lodwar (paving)	Kenya	2015	382	343	17	No
Subtotal alternative corridors			1,603	1,492		
TOTAL			2,490	2,201		

NOTE: Many roads sections along the core Mombasa-Nairobi-Kampala are congested and suffer from capacity constraints. Remedies were proposed in the CDS and some are being implemented.

<b>No. Name</b>	INFR-RL-01 Reconstruction of Tororo- Gulu – Pakwach Railway	<b>Action Plan Period</b>	2012-2014
<b>Mode/Subject</b>	Rail	<b>Intervention Type</b>	Infrastructure, PPP
<b>Corridor</b>	Northern Corridor	<b>Country</b>	Uganda
<b>Agencies Involved</b>	Uganda Ministry of Transport, Uganda Railways Ltd, RVR	<b>EIRR</b>	24%
<b>Related Projects (Donors)</b>	RVR railway upgrading, Uganda and Kenya (private sector), oil sector development Uganda.		

### Background/Rationale

When rebuilt and run efficiently, the northern railway from Tororo in Uganda, through Gulu to Pakwach, will provide South Sudan an opportunity to reduce transportation cost and dependence on road transport. The Tororo-Gulu-Pakwach railway was completed in 1964 and runs for about 500 km. After several periods of conflict in northern Uganda and the decline of traffic levels, the line was closed and all freight traffic diverted to road. The security situation in northern Uganda has improved, and this road/rail route is now the main conduit for international trade with Southern Sudan (more than 200,000 ton per year through Mombasa in Kenya). This traffic is expected to increase as indicated in the traffic forecast, some of which can be captured by a reliable and efficient rail service.

### Status

The feasibility study for reopening the railway to Gulu and Pakwach is complete. The governments of Uganda and South Sudan have also considered proposals to upgrade the line from Tororo to Gulu to standard gauge (400 km) and extend the railway from Gulu to Juba in southern Sudan (250 km). These proposals for long-term development will have to be evaluated taking into account the development of the Lamu/LAPSSET corridor.

### Description/ Major Components

Upgrading the existing northern railway, approximately 500 km, from 25 kg/m rail to +40 kg/m track, 20-t axle loads, with possible realignment in sections to increase operating speeds. This will include strengthening bridges and culverts, lengthening passing loops, and providing for later upgrading to a standard gauge specification (three-rail system). RVR is the designated operator.

### Critical Factors for Success

The success of the project will in the first instance depend on the financial and political support from the Government of Uganda and RVR's ability to enter into a long-term contract with key shippers in Uganda and South Sudan.

### Expected Benefits/ Impacts

The railway will provide an improved and lower cost regional and international trade route for Southern Sudan through Nimule. It will also provide better and lower-cost access to northwest Uganda, with likely political and security benefits for both Uganda and South Sudan.

It is expected that the rail connection to Gulu could partly serve oil exports from South Sudan while the pipeline to Lamu/Mombasa is completed.

### Costs and Other Data

Component	Investment Start Year	Duration	Cost (US\$ million)	PPP Potential
Reopening and upgrading of the Tororo-Gulu Pakwach railway	2012	3 years	325	Yes
TOTAL			325	Yes

<b>No. Name</b>	INFR-RL-02 Gulu Railway/Road Intermodal Facility /ICD	<b>Action Plan Period</b>	2012-2014
<b>Mode/ Subject</b>	Rail	<b>Intervention Type</b>	Infrastructure, PPP
<b>Corridor</b>	Northern Corridor	<b>Country</b>	Uganda
<b>Agencies Involved</b>	RVR, Kenya Railways, Uganda Railways	<b>EIRR</b>	58%
<b>Related Projects (Donors)</b>	RVR Concession		

### **Background/Rationale**

The reconstruction of the railway from Tororo–Gulu–Pakwach and efficient RVR operations, possibly using block trains, will create the incentive for the most substantial traffic (heavy, low cost commodities) to move by rail between Mombasa and Gulu and the transfer to road for the segment between Gulu and Juba. A low cost and well-equipped intermodal facility is required at Gulu to facilitate efficient transfer between modes. The facility can be developed as an ICD to allow customs processing for Northwest Uganda and South Sudan traffic. Other logistics services (consolidation of cargo, warehousing, etc.) could be added, as the logistics sector in the region develops, to enhance the efficiency of the rail and road operation and attract business to the rail mode.

### **Status**

There are no known plans to establish an intermodal facility/ICD at Gulu, but doing so in the context of the planned reconstruction of the Tororo–Gulu–Pakwach railway seems obvious and fits RVR's marketing strategy.

### **Description/ Major Components**

(1) Acquisition of sufficient land, (2) planning and design of the facility to provide efficient logistics, (3) construction ensuring efficient access to main corridor railway and road, (4) securing suitable operator and equipping of the facility, if not part of RVR operations/concession.

### **Critical Factors for Success**

The key factor is RVR's commitment to operating a reliable and scheduled train service to and from Gulu. The facility/ICD will attract other private sector logistics operators to offer nearby distribution, consolidation, and warehousing activities. This has happened at other successful inland rail freight terminals.

### **Expected Benefits/ Impacts**

The development and operation of the Gulu intermodal facility/ICD will promote rail services, and should help shift South Sudan and northwest Uganda's traffic from road to rail. Increased competition implies better services and lower costs.

**Costs and Other Data**

Component	Investment Start Year	Duration	Cost (US\$ million)	PPP Potential
Gulu Intermodal facility/ICD development (in conjunction with reconstruction of railway to Gulu)	2013	2 years	10	Yes
TOTAL			10	Yes

<b>No. Name</b>	INFR-RL-03 Juba Freight Station/ICD	<b>Action Plan Period</b>	2012-2014
<b>Mode/ Subject</b>	Rail	<b>Intervention Type</b>	Infrastructure, PPP
<b>Corridor</b>	South Sudan /Northern Corridor	<b>Country(ies)</b>	South Sudan
<b>Agencies Involved</b>	Ministry of Finance & Economic Planning, Customs Department, Ministry of Transport	<b>EIRR</b>	165%
<b>Related Projects (Donors)</b>			

### Background/Rationale

The capital and major commercial city of South Sudan, Juba is also the origin and destination of substantial export and import traffic. As the economy grows and traffic increases, organized and efficient logistics will be needed.

The trend in international trade is containerization. The full benefits of containerization can be enjoyed only when containers are near shippers' premises, facilitating exporting and importing. To provide this facility some statutory conditions must be met and infrastructure provided.

South Sudan is a landlocked country served by long-distance sources of imports in Kenya, Uganda, DR Congo, and rest of the world. International trade is shipped through Mombasa, more than 2000km from Juba. An inland dry port in South Sudan would minimize the logistic costs of imports and exports and make cargo movement more efficient. In this era of multimodal transportation, inland logistics is just as important as shipping—and inland dry ports/container depots offering full customs and logistics functions are critical.

A freight station or inland dry port/ICD in South Sudan would receive and dispatch or deliver cargo, stuff and strip containers, consolidate and desegregate cargo, provide for customs clearance functions, provide temporary storage of cargo and containers, and maintain and repair container units.

### Status

In Juba, storage facilities are inadequate, bulk imports are not coordinated, delays in documentation and inspection are frequently delayed, and fleet use is low, something that better cargo coordination would change. Rapid economic growth and high trade and transit costs are impelling the development of an ICD.

### Description/ Major Components

(1) Acquisition of sufficient land, (2) feasibility study and design of the facility to provide efficient logistics, (3) construction of infrastructure ensuring efficient access to main corridor roads and provide for interface with possible future railways, (4) securing suitable operator and equipping of the facility.

### Critical Factors for Success

(1) Securing the commitment of key players and decision makers, especially government and revenue authorities; (2) instituting a regulation that will invoke accreditation of ICDs on the basis of transparent criteria; define and guide the relationship between the ICD, shippers, and shipping lines and revenue authorities; and create a competitive environment for ICD operations; and (3) securing financing for the project

### Expected Benefits/Impacts

The successful development and operation of the Juba freight station/ICD will help secure a well functioning and efficient logistics system and industry for South Sudan. Consolidation of cargo will also facilitate securing of return loads as well as the negotiation of better terms among shippers and transport operators, with associated reduction of transport cost.

Specific benefits/impacts are as follows:

- Lower transport costs thorough increased vehicle efficiency
- Issuance of through-bill of lading by shipping lines, hereby resuming full liability of shipments
- Reduced corridor risk (business, economic and political)
- Less demurrage costs and fewer losses due to pilferage
- Fewer movements of empty containers
- Truck parking spaces/stations and cargo handling facilities
- Competitive transport costs
- Reduced inventory cost
- Jobs

### Costs and Other Data

Component	Investment Start Year	Duration	Cost (US\$ million)	PPP Potential
Juba freight station/ICD development	2012	2 years	15	Yes
TOTAL			15	

<b>No.</b>	INFR-L-01	<b>Action Plan Period</b>	2012-2014
<b>Name</b>	Developing River Transport		
<b>Mode/Subject Area</b>	River Nile	<b>Intervention Type</b>	Infrastructure and operations
<b>Corridor</b>	South Sudan Corridor	<b>Country</b>	South Sudan
<b>Agencies Involved</b>	Ministry of Transport, Ministry of Finance & Economic Planning and River Transport Agency	<b>EIRR</b>	
<b>Related Projects (Donors)</b>	JICA is active in the sector		

## Background/Rationale

Many parts of South Sudan are not accessible by road. River transport could play an important role in moving freight and passengers from/to areas along the river, from north to south of the country. Given the relatively higher cost of building roads, developing river transport could secure the north-south transport spine in the short term. To foster mobility and trade by river transport, the government needs to manage river courses and dredge 1,500 km of navigable channels along the River Nile, and provide navigation aids and comprehensive docking facilities, which includes upgrading Juba port and establishing cargo handling facilities.

## Status

The river is seriously silted and its transportation capacity curtailed. Dredging is urgently needed so the river can be used to full capacity. Other problems include fleet age, riverbed weeds impeding navigation, lack of navigational aids, and inadequate equipment and facilities at river ports. There are 15 ports along the river from the southernmost port of Kosti to the northernmost part of Southern Sudan. All need to be improved and developed. Though the government considers all of them important, work on them will have to be prioritized in keeping with the large investment needed. Major ports like Juba, Mongalla, Bor, Adok, Shambe, Malakal, and Renk would most likely be among the first to be rehabilitated or developed.

## Description/ Major Components

- Carry out a feasibility and environmental study.
- Establish a suitable watercourse management system of river courses and clearance of weeds.
- Dredge 1,500 km of navigable channels along the river.
- Complete hydrographic surveys and install navigational aids.
- Develop ports as prioritized in the feasibility and environmental studies, including docking facilities and cargo and passenger handling facilities for appropriate vessels.
- Mobilize private sector to buy into and establishing river services.
- Support private sector in acquiring appropriate vessels, such as barges and tugs.

- Establish other safety regulations including meteorological navigational warnings, search and rescue, port security, safety and environmental compliance strategies.

### Critical Factors for Success

- Government commitment to invest or mobilize finance for investment.
- All parties' commitment to reforming practices and availability of related technical support.
- Private sector being convinced that river services are good business.
- A regulatory environment conducive to fair competition among service providers.

### Expected Benefits/Impacts

- Access to areas that would otherwise have no development opportunity.
- A least-cost river transport system for moving trade and passengers.
- Fewer accidents thanks to better navigational aids and other safety services.

### Costs and Other Data

Component	Investment Start Year	Duration	Cost (US\$ million)	PPP Potential
Carry out feasibility and environmental studies	2012	6 months	0.2	No
<b>I N F R A S T R U C T U R E</b>				
Establish watercourse management system and dredging	2012	24 months	5	No
Develop/construct priority major ports with appropriate facilities and equipment	2012	36months	10	Yes
<b>V E S S E L S E R V I C E S</b>				
Acquisition of vessels (barges, tugs and passenger ferries)	2012	36onths	7	Yes
<b>S A F E N A V I G A T I O N</b>				
Carry out hydrographic surveys and install navigational aids	2012	24months	2	No
<b>T E C H N I C A L S U P P O R T</b>				
Provide technical assistance including establishing suitable regulatory regime	2011	24 months	1	No
TOTAL			25.2	

<b>No. Name</b>	OPER-TA-01 Corridor Road Maintenance Contracting System	<b>Action Plan Period</b>	2012-2013
<b>Mode/Subject</b>	Road	<b>Intervention Type</b>	Operation
<b>Corridor</b>	South Sudan/Northern Corridor	<b>Country(ies)</b>	South Sudan
<b>Agencies Involved</b>	Ministry responsible for Roads and Road Authority		
<b>Related Projects (Donors)</b>	USAID (SISP)		

### **Background/Rationale**

South Sudan's first main paved road will be complete in mid-2012. It must be well maintained to avoid repeated rounds of deterioration and rehabilitation attributable to underfinanced and deferred maintenance and vehicle overloading. To start, South Sudan should establish a management system to ensure adequate and timely regular and periodic maintenance. The CDS proposed that the core corridor roads be put under a long-term performance-based contract that requires the roads to be kept at an agreed condition and protected from the ravages of overloading. Financing of the contract will be from a number of sources, including road public funds (from Road Fund/Government and, in some cases, possible tolling). Some sections could become full "toll roads" given their traffic levels and commercial viability.

### **Status**

The Juba-Nimule road is due for commissioning in mid-2012. A management system for financing and maintaining the road should be articulated as soon as possible to ensure that routine maintenance, resealing, and periodic maintenance are carried out on time from the start. Lack of financing is the usual reason for deferring maintenance to the point of accelerating deterioration. Weighbridges are to be installed near Juba and close to Nimule to control overloading along the road, and management of weight control can be included in the road maintenance contract as well. Articulation of an appropriate contract or several contracts will have to be established by the Ministry of Roads and Ministry of Finance.

### **Description/ Major Components**

(1) An assessment to identify technical, legal, institutional, finance and methodological frameworks and approaches to implement long-term contracts, as well as to define possible packages/sections to be put under such contract; (2) transaction advisory services to structure possible contracts, prepare RFPs, and assist with procurement of maintenance contractors.

### **Critical Factors for Success**

(1) Positive assessment/feasibility study results; (2) commitment of government to implementing contracts; and (3) commitment to provide financing according to contracts terms during the contract period.

### Expected Benefits/ Impacts

(1) Well-maintained roads and lower vehicle operation costs due to good road conditions; (2) maintenance financing optimized by timely maintenance as opposed to costly rehabilitation after long periods of deferred maintenance; (3) more efficient management of roads, including overload control.

### Costs and Other Data

Component	Investment Start Year	Duration	Cost (US\$ million)
Assessment of long-term maintenance possibilities of Northern corridor roads	2012	6 months	0.1
Transaction advisory services to structure contracts and procure contractor(s)	2012	18 months	0.9
Total			1.0

<b>No. Name</b>	OPER-TA-02 Develop Facilities to accommodate increased South Sudan petroleum on Mombasa – Eldoret Pipeline	<b>Action Plan Period</b>	2010-2013
<b>Mode/ Subject Area</b>	Pipeline	<b>Intervention Type</b>	Operations
<b>Corridor</b>	Northern Corridor	<b>Countries</b>	Kenya, South Sudan
<b>Agencies Involved</b>	Ministry of Transport, Kenya Pipeline Company, Petroleum Companies		
<b>Related Projects (Donors)</b>			

### Background/Rationale

The cost of transporting South Sudan’s petroleum could be reduced by maximizing use of the pipeline from Mombasa to Eldoret. Doing so would reduce trucks’ haulage distance by about 900 km—and increase security. In 2010, Kenya Pipeline Company (KPC) estimated that it would cost Ksh 4.5/m<sup>3</sup>/km compared to Ksh 8.5/m<sup>3</sup> km. KPC has been implementing a capacity enhancement program for the pipeline.

Given the strained relationship with Sudan, petroleum products going through Kenya are expected to increase, at least until a strategy for developing new routes, including Lamu corridor, is implemented. The possibility of using pipeline transport for an increased volume of South Sudan petroleum products should be explored and negotiated with KPC. In the short-term, such use might entail increasing pumping capacity and having specialized storage facilities for South Sudan’s products at Eldoret, in conjunction with petroleum companies.

### Status

South Sudan is already served by Kenya’s pipeline. The expected increase in use of the southern route will prove costly if by truck only, given the transportation charges and road maintenance costs. An assessment of opportunities to reduce these costs is required to determine a strategy for maximizing the use of the pipeline.

### Description/ Major Components

(1) Assess opportunities and strategy to maximize use of Mombasa–Eldoret pipeline to carry South Sudan petroleum products; and (2) if viable, promote and secure the interest of KPC and other potential investors in implementing recommended short-term capacity enhancement of Mombasa–Eldoret pipeline.

### Critical Factors for Success

(1) Positive results from the assessment; and (2) commitment of major players to implementing recommended measures.

### Expected Benefits/ Impacts

(1) Lower cost for transporting petroleum products; and (2) better security for products transported by pipeline.

### Costs and Other Data

Component	Investment Start Year	Duration	Cost (US\$ million)
Assessment of opportunities and establish strategy for accommodating increased demand for transportation of South Sudan petroleum products on Mombasa – Eldoret pipeline.	2012	6 months	0.5
Implementing recommendations of measures to accommodate increased petroleum products on the pipeline	2011	18 months	TBD by assessment
TOTAL			0.5

<b>No. Name</b>	OPER-TA-03 Development of Axle Load Regulations	<b>Action Plan Period</b>	2012
<b>Mode/ Subject</b>	Road	<b>Intervention Type</b>	Technical Assistance
<b>Agencies Involved</b>	Ministry of Transport, Ministry of Roads & Bridges, South Sudan Roads Authority, State Ministries of Physical Infrastructure /Roads, South Sudan Police		
<b>Related Projects (Donors)</b>	USAID (SISP), World Bank		

## Background/Rationale

South Sudan's road infrastructure is underdeveloped and suffers from significant maintenance backlogs due to the long conflict with the North. Since the resolution of the conflict, major donors, including USAID, have invested in rehabilitating and upgrading road infrastructure. The Government of South Sudan has also embarked on a program to build weighbridges at four places along its southern border. Without an effective overload control strategy, all this investment is at risk. An effective strategy entails having a clear regulatory framework that sets axle- and gross vehicle mass limits and provides for enforcement and penalties.

## Status

South Sudan has a rudimentary regulatory framework for vehicle loading. A recent assessment by USAID found the legislation inadequate and not harmonized with regional approaches adopted by the RECS, of which South Sudan is expected to become a member in the future.

## Description/ Major Components

The project will comprise

- Reviewing the law and if necessary preparing a chapter on vehicle loads as part of the proposed *Road Traffic and Safety Bill 2011*.
- Drafting regulation on vehicle loads that cover
  - Axle load limits, axle group limits, and gross vehicle combination mass limits
  - Regulation of abnormal loads
  - Obligations of truck operators, drivers, and freight owners in relation to loads
  - Duties of drivers to report for weighing
  - Weighing procedures
  - Presumptions regarding loads
  - Measures that may be imposed when a truck is overloaded (e.g., a ban on continuing the journey; obligation to offload the overload, etc.)
  - Penalties and procedure for payment
  - Powers of law enforcers in relations to overloaded vehicles and loads
  - Management of weighbridges

— Audit procedures.

- Ensuring that South Sudan’s legislation is aligned with regionally approved standards and approaches, in particular administrative penalties whereby overloading fees commensurate with actual damage caused by the overload are imposed.
- Conducting workshops with government and industry stakeholders to promote understanding of the proposed regulations, obtain inputs, and generate support for the future regulations.
- Revising draft regulations based on stakeholder input.
- Training policymakers and law enforcers on the implementation of the proposed regulations.

### Critical Factors for Success

(1) Support of the main implementers of the proposed measures (SSRA, state road agencies, and the police); (2) cooperation of the Ministry of Transport in drafting legislation and of the Ministry of Justice in timely promulgation.

### Expected Benefits/Impacts

(1) Strong and effective regulatory framework that ensures optimal use of investment in road infrastructure; (2) alignment of South Sudan with regional standards, facilitating cross-border road transport from other states that have similar standards.

### Costs and Other Data

Component	Start Year	Duration (specify years or months)	Cost (US\$ million)
Review of law and preparation of first draft regulations	2012	2 months	0.05
Workshop/final draft regulations	2012	1 month	0.025
Training	2012	1 months	0.025

<b>No. Name</b>	OPER-TA-04 Development of Regulatory Framework for Road Transport and the Facilitation of International Road Transport	<b>Action Plan Period</b>	2012 – 2013
<b>Mode/Subject</b>	Road Transport & Traffic	<b>Intervention Type</b>	Technical Assistance
<b>Agencies Involved</b>	Ministry of Transport, South Sudan Police		
<b>Related Projects (Donors)</b>	USAID (SISP), World Bank		

## Background/Rationale

South Sudan is very dependent on international road transport services that carry imports (commodities, consumer goods) from the port of Mombasa and other countries in East Africa along the southern corridor between Nimule and Juba. Lack of facilitation measures, haphazard charges and taxes, and documentary requirements (licenses/permits) imposed by various government agencies on foreign trucks drive up transport costs. Compounding the effect of nontariff barriers are informal roadblocks where monies are extorted from drivers.

South Sudan is not yet a member of any regional economic community (REC) such as COMESA, EAC, or IGAD. Over several decades, RECs have taken steps to facilitate road transport between the territories of member states, such as abolishing documentary requirements, harmonizing charges, and providing for mutual recognition of transport licenses, vehicle registration certificates, driving licenses and third-party insurance. These are complemented by trade-related facilitation instruments such as a common customs bond for transit goods and a guarantee scheme.

At present, this transport is dominated by foreign firms (mostly Kenyan and Ugandan). South Sudanese truckers lack capacity, are poorly organized and have limited ability to compete in the international market. The 2007 National Transport Policy proposes that a regulatory framework be created to improve efficiencies in the subsector, raise standards and improve safety and service quality. This presupposes a system of operator licensing and progressively imposed standards aimed at professional qualifications, financial standing, and adherence to safety and environmental regulations coupled with training.

## Status

Current law and the proposed *Road Traffic and Safety Bill 2011* does not provide a road transport regulatory framework as foreseen in the 2007 policy. Moreover, South Sudan does not implement any of the transport-related facilitation instruments adopted by the EAC or COMESA. Current law and the *Road Safety and Traffic Bill* provide no policy guidance for international road transport. Nor does legislation provide for any measures to facilitate international road transport based on the regional trends. There are no provisions enabling the government to adopt facilitation measures that would reduce or eliminate NTBs faced by transporters to improve transport efficiencies and lower costs.

## Description/ Major Components

The project will comprise the following tasks:

- Review the existing law and proposed new legislation on road transport.
- Review the system of transport regulation in the region and in “good practice” countries to formulate recommendations on measures that South Sudan can introduce to develop its industry, build capacity and raise standards.
- Assess prospects for South Sudan to accede to membership of one or more RECs. Review the implications of REC membership and identify the commitments that may arise, requiring South Sudan to implement the regional transport facilitation instruments.
- Formulate recommendations for
  - An regulatory framework for the road transport industry that improves efficiencies and competitiveness; and
  - Measures to ensure compliance with regional commitments.
- Draft legislation and/or regulations.
- Conduct workshops with government and industry stakeholders to promote understanding of the proposed regulatory framework, obtain inputs, and generate support for the future regulations.
- Revise draft regulations based on stakeholder input.
- Train policymakers and law enforcers on implementation of the proposed regulations.

## Critical Factors for Success

(1) Support by the main implementers of the proposed measures (Ministry of Transport and the police); (2) timely promulgation of regulations by the Ministry of Justice.

## Expected Benefits/Impacts

The major expected benefit is to place the South Sudanese trucking industry on a growth path by improving efficiencies and competitiveness and enabling local firms to gain market share. Introducing facilitation measures for international transport will reduce or abolish the requirements, charges, and taxes imposed on commercial traffic on the Nimule–Juba corridor. This will reduce waiting times at the border, improve transit times, and reduce overall transport cost, ultimately lowering prices of imported commodities and goods. A further benefit will be to ensure that South Sudan is fully prepared for obligations its will assume once it joins one or more RECs. This should also have a wider regional impact in spurring other states to improve transport facilitation in line with their regional commitments.

## Costs and Other Data

Component	Start Year	Duration (specify years or months)	Cost (US\$ million)
Review of law and preparation of input to law / regulations	2012	3 months	0.10
Workshop / Final draft regulations	2012	2 month	0.05
Training	2012	2 months	0.05

<b>No. Name</b>	OPER-TA-05 Establishment of transport observatory on the Nimule-Juba road to monitor nontariff barriers and other constraints to transport efficiency	<b>Action Plan Period</b>	2012 – 2014
<b>Mode/ Subject</b>	Road Transport & Traffic	<b>Intervention Type</b>	Technical Assistance
<b>Agencies Involved</b>	Ministry of Transport, South Sudan Police, Ministry of Finance, State revenue authorities, Ministry of Commerce		
<b>Related Projects (Donors)</b>	USAID		

### Background/Rationale

South Sudan is very dependent on international road transport services that carry imports (commodities, consumer goods) from the port of Mombasa and other countries in East Africa along the southern corridor between Nimule and Juba. Lack of facilitation measures, haphazard charges and taxes, and documentary requirements (licenses/permits) imposed by various government agencies on foreign trucks drive up transport costs. Compounding the effect of nontariff barriers are informal roadblocks where monies are extorted from drivers.

Other road transport corridors in Africa face similar challenges. In West Africa, these have been addressed in three corridors through USAID's road governance initiative (see [www.watradehub.com](http://www.watradehub.com)). Since the initiative started in 2006, bribes and delays have dropped, by 36 percent and 17 percent, respectively. Similarly, a transport observatory that monitors delays and their causes has been established for the Northern Corridor with World Bank funding.

### Status

The Government of South Sudan issued a directive in September 2011 to eliminate informal road blocks and reduce the activity of collecting agents on the road, but anecdotal evidence suggests the directive has had little impact. The government's institutional capacity is weak and its ability to monitor directives limited. In addition, state governments enjoy a large measure of autonomy and the national authorities have limited ability to verify implementation at the state level.

### Description/Major Components

The aim of the project is to replicate the governance initiative introduced by USAID in West Africa and by the Northern Corridor Authority in East Africa on a smaller scale on the Nimule-Juba corridor. The goals are to

- Identify the location of formal and informal road blocks.
- Identify the agencies and persons involved in setting up road blocks.
- Quantify the impact of road blocks in terms of cost and time.

- Gather empirical evidence of the problem as a basis for engaging national and state government and stakeholders in an advocacy program aimed at reducing and eliminating informal road blocks and minimizing the negative impact of legitimate checks and stops.

The project will comprise overlapping phases:

- Initial data collection. The team will design checklists and train regular users of the corridor (i.e. drivers) in their use.
- Data analysis phase. The team will analyze and cross-check data and conduct its own validation to produce a series of quarterly reports on findings and trends.
- Advocacy phase. The team will engage the main agencies responsible for road blocks and explore options to reduce or eliminate roadblocks and minimize their impact.
- Monitoring and evaluation phase. The team will monitor the results of its advocacy to document trends and evaluate impacts. The results of this monitoring will feed into rounds of advocacy to sustain the process of engagement.

### Critical Factors for Success

Initially, data will be collected using standardized checklists completed by truck drivers. The cooperation of operators (truckers) and their drivers will be needed to ensure the integrity of data collection. Periodically, data needs to be validated by team analysts. Once the project starts to produce data, various government agencies will need to be engaged in an advocacy process. This will require that stakeholders be willing to work with the project team in addressing problem areas.

### Expected Benefits/Impacts

(1) Reduction or abolition of requirements, charges, and taxes imposed on commercial traffic on the Nimule – Juba corridor; (2) reduced waiting times at the border, transit times, and overall transport cost; (3) lower prices for imported commodities and goods.

### Costs and Other Data

Component	Start Year	Duration (specify years or months)	Cost (US\$ million)
Data collection	2012	6 months	0.30
Data analysis (partial overlap with data collection)	2012	6 month	0.10
Advocacy	2012–2013	12 months	0.60
Monitoring and evaluation (overlapping with advocacy phase)	2012-2013	8 months	0.20

<b>No. Name</b>	OPER-TA-06 Establishment of a Nimule-Juba Corridor Committee	<b>Action Plan Period</b>	2012 - 2013
<b>Mode/ Subject</b>	Road Transport & Traffic	<b>Intervention Type</b>	Technical Assistance
<b>Agencies Involved</b>	Ministry of Transport, South Sudan Police, South Sudan Roads Authority, Ministry of Finance (Customs), State Revenue Authorities		
<b>Related Projects (Donors)</b>	USAID (SISP), World Bank		

### Background/Rationale

Corridor management groups or committees encourage dialogue between government and the private sector on infrastructure, regulatory, and institutional bottlenecks, and related constraints such as the performance of customs and inspection functions and taxation, that inhibit transport performance. A management framework can help streamline regulation, facilitate transit, support business linkages and encourage efficiencies that reduce transport costs.

### Status

There is no management framework for the Nimule-Juba corridor, and without a public-private forum the transport industry and logistic service cannot advocate for policy and regulatory reforms with one voice. The government has been focusing on improving road infrastructure, but improving corridor performance overall will require the government and the private sector binding to a common vision on operational, infrastructure, and regulatory initiatives.

### Description/Major Components

The aim of the activity is to foster the creation of a corridor management group consisting of key public agencies and private sector organizations for the Nimule-Juba corridor, and to support this group as it streamlines regulation, facilitates transit, promotes public-private cooperation, supports business linkages, and encourages transport and logistics efficiencies.

Major tasks under this activity are as follows:

- Review corridor management best practices in the EAC, SADC & COMESA.
- Develop corridor management options report for the Nimule-Juba corridor, including a review of financing and support options.
- Conduct corridor management workshop to inform select stakeholders of organizational framework options and develop consensus on a framework approach.
- Develop detailed organizational and financing framework, define legal mechanism strategy for preferred option.
- Prepare draft legal instruments for implementation of preferred corridor organizational framework option.
- Prepare organizational and action plans for the future corridor entity. The organizational plan will detail the roles and responsibilities for the organization, mechanisms/procedures for

coordinating with agencies, performance monitoring procedures, etc. The Action Plan will consist of priority projects, a schedule for implementation of detailed studies, improvements, policy changes, and identification of responsible parties.

- Draft final corridor management instrument.
- Provide ongoing technical assistance to corridor management group by advocating for policy change and regulatory reform through working papers, backgrounders, and briefings.

### Critical Factors for Success

(1) Willingness of government and the private sector to work together in developing options for a corridor management structure; (2) early identification of an agency to champion the formation of a corridor group and to provide initial support (e.g., secretariat services); (3) recognition of the possible need to provide “seed” money and related donor support. On this last point, the creation of corridor groups often stumbles due to lack of financing. Stakeholders are unwilling to provide resources until the group demonstrates value and government departments have no budgets for such activities (in addition to facing the usual funding limits).

Experience with the setting up of corridor groups elsewhere underlines the need for sustained engagement and dialogue with stakeholders to build consensus and maintain momentum. Provision should be made for ongoing technical support during the entire duration of the project.

### Expected Benefits/Impacts

The main benefit of a corridor group is a standing forum for advocating the reduction of bottlenecks and other constraints on corridor performance. The ultimate impact is lower transport costs and associated economic growth.

### Costs and Other Data

Component	Start Year	Duration (specify years or months)	Cost (US\$ million)
Review best practices and develop options report / convene workshop	2012	1.5 months	0.04
Develop detailed organization framework	2012	0.5 month	0.025
Develop draft legal instrument	2012	0.5 months	0.025
Follow up workshops (X3)	2012	1 month	0.03
Finalize instruments setting up corridor group / develop Action Plan	2012	1 month	0.03
Ongoing in-country technical support	2012	6 months	0.07

# **Appendix B. Workshop Report**





**USAID**  
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# **South Sudan Corridor Diagnostic Study and Action Plan**

## **Regional Stakeholders Workshop Report**

**September 2012**

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# South Sudan Corridor Diagnostic Study and Action Plan

## Regional Stakeholders Workshop Report

### **SUBMITTED UNDER**

Contract No. EEM-I-00-07-00009-00, Order No. 2

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# Acronyms

CDS	Corridor Diagnostic Study
EAC	East African Community
EU	European Union
GIS	Geographic Information System
IT	Information Technology
JICA	Japan International Cooperation Agency
NAI	Nathan Associates Inc.
NCTTCA	Northern Corridor Transit Transport Coordination Authority
SADC	Southern African Development Community
TA	Technical Assistance
TCBoost	Trade Capacity Building Program
TMEA	Trade Mark East Africa Programme
USAID	United States Agency for International Development
WB	World Bank



# 1. Introduction

Between August 20 and August 24, 2012 a Nathan Associates team composed by Ms. Lisa Yarmoshuk (Project Director), Rean Botha (Legal and Institutional Expert), Carlos Espindola (Team Leader/Transport Engineer), Severin Kaombwe (Transport Institutional Expert), Anthony Murithi (Transport Expert) and Daniel Perea (Logistics Expert) travelled to Juba. The purpose of the visit was to conduct meetings with the Ministry of Transport staff, the USAID South Sudan Mission and to conduct the final workshop for the project.

The South Sudan Corridor Diagnostic Study Stakeholders' Workshop was held on August 23, 2012 in Juba, Republic of South Sudan. The purpose of the workshop was to have stakeholders review the Draft Action Plan and to provide comments for incorporation in the final Action Plan, and to promote broad ownership of the proposed Action Plan among stakeholders.

Hosted by the Ministry of Transport and the Ministry of Roads and Bridges, the workshop was supported by South Sudan's United States Agency for International Development (USAID) mission. The meeting agenda is provided in Appendix A and the list of participants in Appendix B. Attending were 39 stakeholders representing different organizations, including government entities and development partners.

This report summarizes the key points presented in each workshop session, as well as issues discussed and conclusions and recommendations offered.



## 2. Key Messages from Presentations and Discussions

### Workshop Opening

USAID South Sudan Mission Economist, Mr. Paul Pleva, opened the workshop and welcomed stakeholders. This was followed by an introduction to the workshop by South Sudan's Deputy Minister of Transport, Honorable Mayom Kuoc Malek. The minister highlighted the importance of studying South Sudan's transport sector to understand constraints on its development and to create a comprehensive plan to integrate the country into the region and support social welfare. These official opening remarks were followed by a short film, *The Northern Corridor of East Africa: the Route of Opportunity*. After the film, the study team delivered a series of technical presentations, which are summarized below.

### Technical Presentations

#### STUDY SCOPE

The South Sudan CDS reviewed all aspects of the Northern Corridor and its subcorridors between Juba, the capital of South Sudan, and the Port of Mombasa. Aspects included infrastructure, nontariff barriers, policies, regulations, and institutional organization. Economic and traffic forecasts presented in the CDS took into consideration the potential impact of building a pipeline to connect South Sudan and the proposed Port of Lamu in the Indian Ocean.

The study team explained its process for collecting data to gauge corridor conditions, including the time and cost of transporting goods and national and regional policies. This information served as the basis for establishing a baseline for measuring corridor improvement; analyzing the costs and benefits of various interventions; examining means for achieving improvements, such as public-private partnerships; and creating an action plan for development of an efficient transport system connecting South Sudan to East Africa and the world through the Port of Mombasa. The team emphasized that a critical goal of the study was to promote interest for the implementation of proposed projects and support among international partners and the private sector. Rather than presenting a long-term development strategy, the plan identifies and prioritizes infrastructure and operational interventions that can have an immediate impact on corridor performance and competitiveness.

## **EXISTING INFRASTRUCTURE REVIEW**

The study team described the components of South Sudan's transport infrastructure analyzed for the study, including segments of the road network that connects Juba and the Northern Corridor. The conditions of components in each segment were summarized, and the team pointed out that some components had developed rapidly in the ten months since field work for the study had been completed.

## **TRAFFIC DEMAND FORECASTS**

The study team described how it forecast traffic demand and presented the results of forecasts, including historical trade volumes and estimates of future trade volumes. In describing the types of traffic in the corridors, the team explained that domestic traffic made up the biggest portion. Traffic along the Mombasa to Juba Corridor is forecast to increase by 14 million tons by 2015 and by 33 million tons by 2030. By 2015 regional roads will need to handle a 64 percent rise in traffic (from 2009).

## **OVERVIEW OF CORRIDOR PERFORMANCE**

To pinpoint corridor inefficiencies, the study team used FastPath, a diagnostic tool that produces indicators for time, cost, and reliability. The team described analytical variables and scenarios, explained reasons for its selection of cargo type and why it limited the study to imports and domestic flows, described issues affecting the Northern Corridor and their implications for South Sudan's transport network, and presented summary tables on corridor efficiency, via the Port of Mombasa.

The team then compared the performance of corridor alternatives connecting the Port of Mombasa and Juba. Considering the impact of port processing time on corridor performance overall, the team recommended developing port capacity as a first step for improvement. While land transport is the most costly mode, ports consume the most time. Inventory costs also have a significant impact on corridor efficiency.

The team explained that Juba Direct is the fastest and least expensive corridor for getting import cargo to Juba. Transporting a container along the Nadapal corridor costs US\$6.81 per km, compared to US\$4.28 in the Juba via Kampala alternative. This means Nadapal is more than 60 percent more expensive than the Juba via Kampala alternative, which is quite significant considering that the Nadapal route is slightly shorter.

The study team also noted the low cost of transporting bulk cargo via Kaya (US\$3.15 per km). The Kaya route has no weight restrictions so truck owners overload their equipment, increase their productivity, and offer lower prices to customers. Such regular overloading, however, is unsafe and drives up the costs of maintaining the road network in the long term.

Finally, it was shown that containers spend less time at the port than bulk cargo because most containerized cargo is "aid cargo" (unbound) and subject to relatively straightforward clearance procedures.

## **LEGAL AND REGULATORY FRAMEWORK AND REFORMS**

The study team first described the regulatory framework established by the 2011 Constitution, which created a decentralized system comprising national, state, and local governments. The legislative and executive authority for transport is shared between national and state governments. The division of authority is not always clear so there is potential for overlap and conflict. This was followed by detailed analysis of the legal and regulatory framework for road transportation. Conclusions focused on the necessity of clarifying the Constitution's provisions with comprehensive legislation governing road traffic and transport. Aspects of the regulatory framework, such as limits on axle loads, need significant improvement. International transport facilitation must be a priority in the future versions of the law and new institutional mechanisms are needed to coordinate and synthesize the regulatory activities of national and state authorities.

## **DRAFT ACTION PLAN AND PROPOSED PROJECTS**

The criteria for prioritizing projects—including estimated cost, estimated economic impact (IRR), and foreseen timeframe for implementation—were explained in detail. The team emphasized that while proposed projects are for the short and medium term and reflect an attempt to address South Sudan's most pressing needs, they are also building blocks for long-term development plans. The general characteristics of 18 proposed projects were then presented: seven projects for roads, three for rail, one for river infrastructure development, pertaining to an oil pipeline, and six technical assistance projects covering multiple transport modes and addressing regional integration and harmonization.

## **FUNDING REQUIREMENTS, FINANCING AND PPP POTENTIAL, NEXT STEPS**

Building on the previous presentation, the study team noted which projects have potential to attract private investment and pointed out the government's capacity limits for designing and managing complex public-private partnerships. According to the study, more than half of the resources necessary for the execution of the Draft Action Plan need to be funded by government money or by donors.

## **Stakeholders' Closing Discussion**

Before the floor was opened for the closing discussion, the film *East Africa's Northern & Central Corridors: Investing in Transport Infrastructure* was aired. Comments and information gathered during the workshop, and summarized below, will be integrated into the final report in alignment with the project's scope of work.

### *On Study Scope*

- The report did not cover cross-cutting issues such as HIV/AIDS or social and environmental impacts. *The scope of the project did not entail addressing issues beyond transportation.*
- The report did not specify which activity is funded or undertaken by which donor.

- Clarification regarding the implementation framework, particular tasks, and technical assistance, and by which donor, would be useful. *The report is envisioned to provide a prioritized set of problems and remedial measures to be used as a foundation for planning purposes.*
- Clarification is needed on whether the Ministry of Roads and Bridges, Ministry of Interior, Ministry of Finance (for customs) were consulted during data collection or if only the Ministry of Transport was consulted. *All ministries were consulted; however most of the public officials interviewed have changed positions.*
- The study provides a strategy for taking the action plan to decision makers.
- The study could be complemented with project-specific plans for long-term sustainability.
- It was pointed out that the study's end point is Juba was inadequate. The CDS needs to be extended to other parts of the country.
- It was suggested that the study consider historical transportation costs to establish whether costs have been rising or falling since independence. *The team suggested complements the South Sudan CDS study with the CDS report for the Northern and Central corridors to understand the situation of South Sudan transport sector within the regional context.*
- The study should be updated to account for changes that have occurred in the last ten months, such as the reduction in the number of road blocks.
- It was pointed out that road safety should be covered in the report. *The study team noted that road safety is indeed considered in the report.*

#### *On Existing Infrastructure Review*

- It was pointed out that the correct distance for Nimule-Juba road distance is 192km not 193km.
- Stakeholders noted that the country has been facing fuel shortages that aggravate costs of operation.

#### *On Traffic Demand Forecasts*

- It was suggested the extension of the oil pipeline from Eldoret and Kisumu be considered in the demand forecast. *This request has been included in the Final Report.*
- The transport link between South Sudan and Djibouti should be part of the study and not only the connection with Mombasa.

#### *On Overview of Corridor Performance*

- Stakeholders wanted to know whether traders pay similar or equal taxes on transportation of goods in Uganda and Kenya before coming to South Sudan.
- Clarification was requested on whether insecurity affects transportation on the Northern Corridor or is limited to South Sudan and perhaps its neighbouring countries. *The Team*

*explained that security was a concern in other segments of the Northern Corridor, particularly beaten Eldoret and Lokichogio.*

- It was emphasized that high transportation costs on the corridor and in South Sudan are due to numerous taxes, road blocks, delay at borders and insecurity.
- A breakdown of costs to identify specific transportation costs for South Sudan road transport links was requested. *This request had been included in the Draft Final Report.*

#### *On Legal and Regulatory Framework and Reforms*

- The Ministry of Transport (MoT) has launched the Transport Sector Development Program to review ministry functions. As part of the program a restructured institutional framework will be adopted that better supports those functions. The Ministry will also be reviewing how it needs to position itself vis-à-vis other ministries with responsibility for related sectors. These other ministries include the Ministry of Roads and Bridges, Ministry of Interior (South Sudan Police), Ministry of Finance and Economic Planning (satellite revenue collection), and the Ministry of Housing and Physical Planning. It was pointed out that the South Sudan Roads Authority has been established and a CEO recruited.
- The workshop was informed that the Road Traffic and Safety Bill – prepared with USAID assistance – is being processed through various channels. There has been a long delay in reaching consensus on the content of the bill, mainly because of differences of opinion between the MoT and the Ministry of Interior/Police relating to responsibility for various functions, such as vehicle licensing. The process has been complicated by the fact that the Constitution assigns several road traffic functions to state governments. To resolve the logjam, an inter-ministerial committee reviewed international best practice and submitted the draft bill to the Ministry of Justice for vetting. The Ministry of Justice has not yet submitted the draft to the Council of Ministers. The ongoing delay suggests that there are still differences of opinion between ministries related to the provisions of the bill. The workshop was informed that the South Sudanese authorities would benefit from additional technical assistance in resolving conflicting views on the management of road traffic in South Sudan and to finalize the text of the bill.
- The MoT needs technical assistance in other areas, including supporting preparation of an inland waterway law and railway law (legislation to establish a Civil Aviation Authority is to be prepared with EU assistance). An important goal of the government is to harmonize legislation with EAC laws.
- It was suggested that while the study identified several problem areas it did not propose concrete solutions. *The team responded by indicating that the aim of the study was, first, to identify deficiencies. The Action Plan identifies interventions that can address these deficiencies.*
- It was pointed out that poor security causes delays and raises costs and should be addressed jointly by relevant authorities in South Sudan, Kenya, and Uganda.
- Stakeholders ratified that the involvement of many security agents makes it difficult to manage route security.

- Complaints of aggression by the law enforcement agents were denounced.
- The need to train police involved in corridor activities was ratified. The workshop was informed that highway traffic police are being trained at the present time.
- Concern about the lack of tribunals, arbitration, or forums for recourse when traders or transporters are aggrieved was expressed. In South Sudan there is no room for appeal, which is a significant difference with EAC countries.
- Enacting treaties to extradite drivers and other operators who commit crimes requires regional and bilateral cooperation. Such treaties will deter international operators who commit crimes in South Sudan and other parts of the corridor.

*On Draft Action Plan and Proposed Projects*

- It was noted that the workshop and report were important in presenting solutions to issues raised and diagnosed and in highlighting critical matters for decision makers.
- All recommendations in the Action Plan should be part of a cohesive development strategy, and the Action Plan should be broken into smaller short-term deliverables to ease implementation.

*On Funding Requirements, Financing and PPP Potential, Next Steps*

- Stakeholders confirmed their commitment to take ownership of the Action Plan.
- Construction and investment costs for Kaya-Yei-Juba and Nadapal-Torit-Juba roads were questioned. The estimates were deemed lower than data available at the Ministry of Roads and Bridges suggests and as suggested in recent World Bank studies. It was pointed out that there is no costing of necessary realignment of existing roads in South Sudan. *The explanation of this shortcoming is presented in the Final Report.*
- The workshop was informed that Juba-Nimule road will be opened on September 12, 2012. Stakeholders thanked USAID for funding road construction and for funding the South Sudan CDS.
- It was stressed that funding and infrastructure support is required to help the South Sudan Police execute corridor control operations.
- It was recommended that transport activities funded/carried by donors in South Sudan be expanded.
- The workshop was informed that road to Juba via Nadapal is being considered for construction (paving), and a study for construction has been concluded.
- It was suggested that creation of a road fund would be a significant step in sustaining development of the transport network.

## **Summary and Conclusion of Workshop**

The Undersecretary of the Ministry of Roads and Bridges Honorable Gabriel Makur presented a summary of critical needs for next steps in improving corridors and the government's views on the future of the country's transport sector. As expressed by stakeholders and pronounced by the Chair, the South Sudan CDS Draft Action Plan was approved. The Chair adjourned the workshop at 16:30.



# APPENDIX B-1

## SOUTH SUDAN CORRIDOR DIAGNOSTIC STUDY STAKEHOLDERS WORKSHOP -JUBA GRAND HOTEL JUBA, REPUBLIC OF SOUTH SUDAN - August 23, 2012

### Workshop Purpose and Objectives

- Stakeholders to review Draft Action Plan
- Stakeholders to provide input and verdict on proposed Integrated Action Plan for improving performance of the corridors connecting South Sudan to EAC
- Promote broad ownership of the proposed Integrated Action Plan by stakeholders

0800 – 0900	Registration
<b>Session 1: Opening</b>	
0900 – 0930	<ul style="list-style-type: none"> <li>• Call to Order and Welcome</li> <li>• Statement by Paul Pleva, Mission Economist, USAID South Sudan</li> <li>• Opening Statement Captain David Martin Hassan, Undersecretary, Ministry of Transport</li> <li>• Official Opening by Honorable Agnes Poni Lukudu, Minister of Transport</li> <li>• Film: The Northern Corridor of East Africa: The Route of Opportunity</li> </ul>
<b>Session 2: Study Overview and Economic Parameters</b>	
0930 – 1030	<ul style="list-style-type: none"> <li>• Study Scope</li> <li>• Existing Infrastructure Review</li> <li>• Trade and Traffic Forecasts</li> <li>• Discussion</li> </ul>
1030– 1100	<i>Tea/Coffee Break</i>
<b>Session 3: Corridor Performance and Issues to be Addressed</b>	
1100 – 1230	<ul style="list-style-type: none"> <li>• Overview of Corridor Performance, Requirements and Strategies for Improvement</li> <li>• Legal and Regulatory Framework and Reforms</li> <li>• Discussion</li> </ul>
1230 – 1400	<i>Lunch Break</i>
<b>Session 4: Proposed Action Plan/Projects</b>	
1400 – 1530	<ul style="list-style-type: none"> <li>• Proposed Projects and Draft Action Plan</li> <li>• Funding Requirements, Financing and PPP Potential, Next Steps</li> <li>• Discussion</li> </ul>
1530 – 1600	<i>Tea/Coffee Break</i>
<b>Session 5: Summary and Conclusion of Workshop</b>	
1600 – 1700	<ul style="list-style-type: none"> <li>• Film: East Africa’s Northern &amp; Central Corridors: Investing in Transport Infrastructure</li> <li>• General Discussion</li> <li>• Summary/Conclusion of Meeting</li> <li>• Closing of the Workshop by Eng. Gabriel Makur, Undersecretary, Ministry of Roads and Bridges</li> </ul>
1700 – 1830	<i>Reception</i>